The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 23. No. 9-A TULSA, OKLAHOMA, JULY 24, 1924

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TABLE OF CONTENTS

SPECIAL ARTICLES

Stored Oil Dominant Factor at Present 19
By Andrew M. Rowley
Crude output fairly stationary. Accurate, up-to-date figures on production of vital importance.

Industrial Significance of Cracking 20
By Charles E. Bowles
Refiners real conservationists getting more gasoline from less oil and keeping consumers supplied at less cost.

Oil Field Workers Display Keen Humor 21
By Ralph T. Baker
Must be real men to make good. Modern field camps and amusements quite different from the old days.

Oil Planks in Political Platforms 24
By L. M. Fanning
LaFollette to lead attack on industry, claiming credit for patent suits begun by Attorney General Stone.

Billion Dollar Unit in Oil Business 25
By N. O. Fanning
Facts about real size and operations of Standard of New Jersey reveals it representative of industrial enterprise.

Drilled 2,000 Feet Before Drake's Time (Illustrated).... 28
By W. H. Gallaher
Primitive Chinese methods in salt wells little changed after 20 centuries. Bamboo derricks, lines and pipe.

Searching Interior of Earth's Crust (Illustrated)..... 32
By Alfred Gradenwitz
Use of the Torsional balance, electric, magnetic, radioactive and geothermic methods of exploring structure.

Punishing the Oil Industry (Editorial) 34
One Attorney General would prosecute oil companies for effects of their superefficiency in production.

Mississippi Being Explored for Oil in 24 Counties..... 75
By Vern T. Whitney

Colorado, New Mexico and Utah to Be Tested This Year 76
By F. J. S. Sur

Treatment of Water for Refinery Use 84
By Ralph T. Baker
Very important problem in operation of plants, especially in Mid-Continent methods vary greatly.

Prairie Announces New Plan for Storing Oil.....113

Rotogravure Section 65-72

Natural Gasoline Operators Meet 23
By Ralph T. Baker
Practical discussion of technical problems at second regional meeting of plant men at Drumright.

Oil Securities Unsettled During Week 106
By N. O. Fanning
Passing of Sinclair dividend and new low for Atlantic Refining factors in market. Oil group weak.

REFINING AND MARKETING

Fuel Oils Firm Despite Crude Cut 22
By C. O. Willson
Prices unchanged due to strong demand in Group 3. Gasolines weak with prices on all grades lower.

Refining and Marketing News 82

Oil Companies File Answer in Nebraska Suit 82

General Reductions Feature in East 86
By N. O. Fanning

Tank Wagon Cut Disappoints Chicago 88
By J. B. Waldo

Crude and Refined Prices 26-27

Tank Wagon Quotations 30

FIELD OPERATIONS

East Central Texas 36

Central West 36
By Whit

Oklahoma 38
By C. D. Lockwood
Magnolia's well in 25-8-7 looks like opening of another prolific area west of Wewoka.

West Kentucky-Tennessee 40
By Vern T. Whitney
C. H. Andrus well in Walker Pool, Allen County, making 200 bbls. Nineteen completions, 14 producers.

Mexico 40
By George Blardone

California 42
By L. P. Stockman
Completions and initial production at Torrance disappointing. Long Beach steadily declining.

North Central Texas 44
By Dan F. Dugan
Production declines 4,815 bbls. Big Lake's No. 10 University, Reagan County, now making 1,450 bbls.

Canada 46
By Victor Lauriston

North Louisiana-Arkansas 48
By M. L. Vaughn
Cotton Valley shows material increase over previous week. General decline in Arkansas.

Kansas 50
By C. D. Lockwood

Wyoming 52
By F. B. Taylor
Rocky Mountain producers bitter against Mid-Continent because of failure of shutdown movement.

Gulf Coast 54
By P. L. McGreal
Completion in Vinton Pool at shallow depth of 1,170 feet makes 1,000 bbls.

Pennsylvania-West Virginia 56
By D. S. Wakenight
Everett Co.'s second test on Montgomery farm, Hanover Township, Licking County, best completion in months.

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 17

Men Known in Oildom and Personals (Portrait)..... 58

Natural Gas Developments 60

Equipment and Supplies 62

Pipe and Tinplate Prices Hold 62
By B. E. V. Luty

Attorney General Threatens Oil Companies 102

Oil Company Shows Losses in South Dakota 120

New York Producer Tells Story of Oil 121
By John P. Herrick

How Crude Prices Are Made 122

Coldwater Field, Mercer County, Ohio 124
By Whit

Crude Petroleum Statistics 136

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Refiners real conservationists getting more gasoline from less oil and keeping consumers supplied at less cost.

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By Ralph T. Baker
Must be real men to make good. Modern field camps and amusements quite different from the old days.

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By N. O. Fanning
Facts about real size and operations of Standard of New Jersey reveals it representative of industrial enterprise.

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Primitive Chinese methods in salt wells little changed after 20 centuries. Bamboo derricks, lines and pipe.

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Rotogravure Section 65-72

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Practical discussion of technical problems at second regional meeting of plant men at Drumright.

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Prices unchanged due to strong demand in Group 3. Gasolines weak with prices on all grades lower.

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Equipment and Supplies 62

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By B. E. V. Luty

Attorney General Threatens Oil Companies 102

Oil Company Shows Losses in South Dakota 120

New York Producer Tells Story of Oil 121
By John P. Herrick

How Crude Prices Are Made 122

Coldwater Field, Mercer County, Ohio 124
By Whit

Crude Petroleum Statistics 136

Stored Oil Dominant Factor at Present

Average daily production in United States week ended July 19, 2,006,776. Gain over previous week, 1,749 bbls.

Crude Output Fairly Stationary. Accurate, Up-to-date Figures on Production of Vital Importance

Highest daily average estimated production this year, week ended July 5, 2,019,095 bbls. Lowest, January 12, 1,871,143 bbls.

By Andrew M. Rowley

With the main factor affecting the crude petroleum situation—the amount of gasoline and crude oil in storage—practically the same now as on the first of May, developments during the next three or four weeks are expected to determine fairly definitely just how long it will take the industry to recover fully from the present period of depressed prices. The quantity of gasoline in storage, probably about 1,600,000,000 gallons at this time, and about 420,000,000 barrels of crude above ground, are the two important features which indicate the period of convalescence of the petroleum industry from the siege of overproduction of both crude and gasoline will be rather long drawn out. While consumption is averaging probably 20 per cent more than last year, it would require a far greater consumption than this to counterbalance production of gasoline at the rate that production has been holding up and to draw upon storage in sufficient volume to bring material relief to the situation.

While proration and curtailed buying upon the part of purchasing companies have been made effective in the Mid-Continent area and substantial price reductions have been made in every oil field of the country except California during the past few days, the production of crude petroleum is being held at a high level and has shown no indication to respond to the handicap of lower prices and restricted purchases. The output of all fields of the country showed a gain of 1,749 barrels daily last week and the production curve has shown a tendency to straighten out and remain fairly stationary since the first of June.

Crude oil producers, however, are not entirely to blame for the present situation. The stocks of crude are no more excessive than the stocks of gasoline and yet refiners, during May, established a new high record in the quantity of gasoline manufactured. In addition, there has been no pronounced curtailment in refinery operations since that time. With the production of gasoline establishing new high records and no evidence in sight the output of crude will show any material decline in the near future, there is only a slight possibility that there will be any material reduction in the quantity of crude and gasoline in storage by fall.

Wildcatters remain active despite the present efforts to curtail production. In the North Central Texas district a well estimated as good for from 30 to 50 barrels daily was completed 20 miles from nearest production. The Cotton Valley section of Louisiana is again attracting attention with a substantial increase in output in that area. The Richland Field in East Central Texas has jumped to the front within the past few days and its output last week is estimated to have averaged 14,000 barrels a day with an average of 15,157 barrels daily for the week ending last Wednesday. This field is exceeding the fondest hopes of operators there. During the past week the Sun Oil Company brought in a well in the field which started at 1,250 barrels and when drilled one foot deeper its output increased to 3,200 barrels daily. While production of California fields showed an increase of 2,000 barrels daily during the past week, completions and initial output at Torrance were disappointing and the production of Long Beach is showing a steady decline. A completion by the Magnolia Petroleum Company may open a new producing area west of the Wewoka Field in Seminole County, Oklahoma. The new well is rated as good for 500 barrels daily. A new Dutcher sand pool seems to have been discovered in Okmulgee County, Okla.

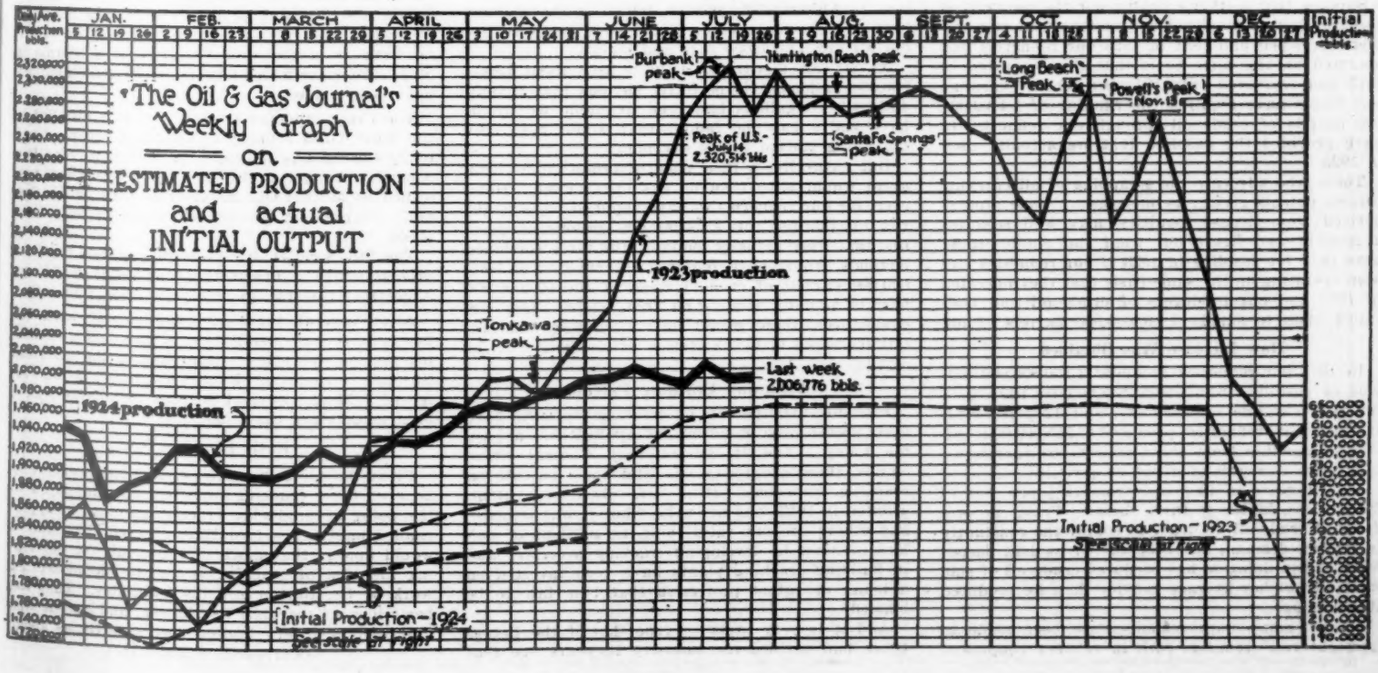
While it is of vital importance at all times for every person connected with the petroleum industry, whether it be in producing, refining or marketing, to have available correct and up-to-date figures on crude oil production for the entire country, this is especially true now when so much depends upon production. In this connection, discrepancies between the weekly estimates of The Oil and Gas Journal and one other widely published estimate, warrant comment. The figures as published on this page each week by The Oil and Gas Journal are from one week to 10 days ahead of the other estimate mentioned. This fact was emphasized during the past few weeks. For the week ending July 5, The Oil and Gas Journal showed production of crude had increased 22,863 barrels a day while the estimate sent out by the other source showed a decrease of 7,300 barrels daily. The increase in production noted by The Oil and Gas Journal for the week ending July 5 was covered in the other estimate for the week ending July 12 when it was announced production had increased 24,300 barrels daily, whereas The Oil and Gas Journal showed production during that week had declined 14,068 barrels daily.

PRODUCTION IN UNITED STATES

Estimated daily average production in the oil fields of the United States for the week ended July 19 and a comparison with previous week follows:

	July 19	July 12
Oklahoma—Northern Fields:		
Tonkawa	36,875	36,250
Burbank	85,300	87,115
Other Osage Fields	51,050	51,200
Cushing and Shamrock	23,875	23,910
Bristow and Eastern Bristow	50,215	49,900
Cromwell	43,850	40,280
Stroud	18,375	20,710
Northern Miscellaneous	101,975	102,050
Southern Fields	72,475	73,200
Total Oklahoma	483,990	484,615
North Louisiana	55,580	52,620
Arkansas—		
El Dorado and Calion	12,875	13,260
Smackover Light	37,015	37,150
Smackover Heavy	94,880	96,385
Stephens and Nevada County	3,815	3,910
Total Arkansas	148,585	150,705
North Central Texas	123,125	127,940
East Central Texas, (Mexia, Currie, Corsicana, Powell)	124,350	128,300
Kansas	80,875	79,100
Total Mid-Continent Area	1,016,505	1,023,280
Gulf Coast	79,795	79,395
Southwest Texas	55,976	55,612
Eastern	107,975	107,850
Wyoming-Montana	130,525	124,890
California—		
Santa Fe Springs	57,000	58,000
Long Beach	154,000	155,000
Huntington Beach	44,000	45,000
Torrance	55,000	56,000
Remainder of State	306,000	300,000
Total California	616,000	614,000
Total United States	2,006,776	2,005,027

Increase, 1,749 Barrels



Industrial Significance of Cracking

Refiners the Real Conservationists Getting More Gasoline From Less Oil and Keeping Consumers Supplied at Less Cost

By Charles E. Bowles

Cracking is the most important line of development in the entire petroleum industry today.

Years ago we passed the point where the refiners of the United States, using the old straight run distillation methods, could produce enough motor fuel to supply the demands of the rapidly increasing automobile industry.

And we are today definitely past the point where the producers of crude oil could supply enough oil to the refineries, if they were operating on the same gasoline recovery basis that they operated 10 years ago.

In 1913 we produced about 248,000,000 barrels of crude oil from which the refiners produced about 1,250,000,000 gallons of gasoline—a recovery of about 12½ per cent of the total crude runs to stills.

January 7, 1913, Dr. William M. Burton of the Standard of Indiana was granted his first patent on what is known as the Burton Cracking Process—and the entire business of cracking, as we know it today, has developed since that time.

Prior to 1911 there was so little natural or "casinghead" gasoline made in the United States that the Government did not collect separate statistics for it. In 1913 the gasoline produced from this source amounted to 24,000,000 gallons, as compared with 1,250,000,000 gallons produced by "straight run" refining.

Remarkable Change in Decade

In other words, in 1913, Burton was operating the first small cracking plant in the United States—compression and absorption plants were making 2 per cent of our gasoline while the refiners were making 98 per cent by straight run distillation.

In the 10 years since 1913 a remarkable change has taken place in the making of motor fuel. In 1923 straight run distillation produced 70 per cent of our motor fuel, cracking produced 21 per cent and natural or casinghead gasoline 9 per cent.

In 1923 we run 600,000,000 barrels of crude through our refineries and produced 7,555,000,000 gallons, or 30 per cent, of gasoline, as against 12½ per cent in 1913.

Suppose that neither cracking nor the recovery of gasoline from casinghead gas and natural gas had been developed and that in 1923 our refineries had operated on the same basis that they operated in 1913 and recovered only 12½ per cent of gasoline—it would have required the running of 1,440,000,000 barrels of crude oil through our refineries to have provided the gasoline that we actually used in 1923.

Those who advocate the scrapping of all cracking process patents giving, as one reason, "huge profits" derived from license royalties, may well stop for a moment and figure out what the public would have paid for gasoline in 1923 if our refineries had been operating on the same basis that they operated in 1913 and our producers of crude oil had been called upon to supply 1,440,000,000 barrels of oil.

How Increase Was Obtained

In 1913 our refineries produced 1,250,000,000 gallons of gasoline from about 248,000,000 barrels of crude—a gasoline recovery of about 12½ per cent. In 1923 our refineries produced 7,555,000,000 gallons of gasoline from about 600,000,000 barrels, or a gasoline recovery of about 30 per cent.

This increase in 10 years, from 12½ per cent to 30 per cent, is due to three things. First, the producer of crude oil, in order to supply the constantly increasing demand, has been forced to drill deeper wells and in doing so has produced crude oil of substantially higher average gravity than he produced 10 years ago.

Second, many improvements have been made in "straight run" refining, both in refinery equipment and in refinery practice—and these improvements enable the straight run refiner of today to produce a larger percentage of gasoline than he produced 10 years ago. The net result of these two items has been to increase the recovery of gasoline from 12½ per cent in 1913 to 22 per cent in 1923.

Third, natural or casinghead gasoline seldom goes on the market as a finished motor fuel, its use being confined almost entirely to making blends with cracked gasoline, or blends with naphtha, or for "pepping up" low gravity straight run gasoline.

In 1923 about 21 per cent of our motor fuel came from cracked gasoline and about 9 per cent from natural gasoline. Taken together, cracked gasoline and natural gasoline account for the increase from 22 per cent to 30 per cent.

Summarizing the causes for this increase from 12½ per cent in 1913 to 30 per cent in 1923 we have

1—The producer, for producing higher gravity crude oil.
2—The refiner, for improving his equipment and practice.
3—The cracking plant, for producing large quantities of either "blending stock," or commercial gasoline. The casinghead plant for producing raw gasoline for the refinery and the cracking plant.

What Actually Happened

Laying aside all theoretical arguments of what might have happened, here is what actually happened in 1923. Our refineries ran 600,000,000 barrels through the stills and obtained 132,000,000 barrels or 5,500,000,000 gallons of "straight run" gasoline. This is a recovery of 22 per cent—and represents 10 years of improvements and progress in straight run refining.

And if, in the same 10 years, we had not developed cracking and the recovery of gasoline from casinghead gas and natural gas, this 5,500,000,000 gallons would have been all of the gasoline that would have been available from the 600,000,000 barrels of oil that we ran to stills in 1923.

During 1923 there was an average of about 14,000,000 cars and trucks in use in the United States. About 90 per cent of our entire gasoline output is used as motor fuel—90 per cent of 5,500,000,000 gallons is 4,950,000,000 gallons, which is the amount that straight run refining would have made available for our 14,000,000 cars and trucks.

As our cars and trucks actually used about 6,800,000,000 gallons it is perfectly obvious that if only 4,950,000,000 gallons had been available we would have had a gasoline famine that would have shot the filling station prices sky high.

But naturally, with a flood of crude oil in 1923, there would have been no gasoline famine. However, for our refineries to have supplied, by straight run distillation, the 7,555,000,000 gallons of gasoline that were actually made by the three combined methods, would have required the running of 750,000,000 barrels of crude instead of the 600,000,000 barrels actually run. And that, under these circumstances, there would have been very substantial increases in filling station prices, goes without saying.

Thousand Cracking Patents

Probably 1,000 patents on cracking processes have been issued—and hundreds of applications are on file today. And if, as Attorney General Stone claims, there are today no valid basic patents on cracking processes, then Dr. Burton's patent, granted in 1913, was not valid when it was issued—and others are not valid—and the millions of dollars invested in developing cracking processes and in building cracking plants have been invested on a belief of patent protection that bids fair to be blasted.

And it is very probably true that if the Patent Office had notified the industry 10 years ago that no basic patents would be granted and that cracking was wide open, then the development of cracking would have proceeded along substantially different lines than it has taken.

In 1923 there were about 2,000 cracking "units" in operation of which about 1,600 were Burton process and the remaining 400 were scattered among the Cross, Dubbs, Holmes-Manley, Coast, Isom, Fleming, Jenkins, and a number of others.

The Texas Company has developed the Holmes-Manley process and some idea of its efficiency can be got from the fact that in 1922 the company ran 27,706,000 barrels of crude and recovered 7,351,000 barrels of gasoline while in 1923 they ran 29,556,000 barrels and obtained 10,000,000 barrels of gasoline. The recovery for 1923 was almost 34 per cent as compared with 26 per cent for 1922. The company has in use at present about 75 Holmes-Manley "units," or 300 stills.

The Cross brothers of Kansas City, Mo., started experimental work in 1915-16, later building their first experimental plant at the Indian Refining Company's Lawrenceville, Ill., refinery. This plant started operations in January, 1921. At the beginning of 1922 this was the only commercial-size Cross plant in operation, but by the end of the year six refineries had installed 11 units and by the end of 1923 the same six refineries had increased to 40 units, with 22 new refineries licensed. Their first patent was issued October 31, 1916.

Development of Processes

In the 70's and 80's Jesse A. Dubbs was a Standard Oil chemist at Pittsburgh, where he worked out a process for making the first artificial asphalt. Going to California about 1895 he worked out a process for dehydrating oil. About 1914 his various patents were taken over by the Armour interests of Chicago and experiments with cracking were begun at the Armour refinery at Independence, Kans. In 1916 a plant of about 300 barrels capacity was built at Independence and cracking was carried on at intervals for several years. In 1919 a Dubbs cracking plant was built for the Roxana Petroleum Corporation at Wood River, Ill., and in 1920 an experimental plant and research laboratory were built at Riverside near Chicago. Many Dubbs process installations have been made since that time.

The first Fleming process patent was issued in December, 1919, and a plant installed at the Martinez refinery of the Shell Company of California in May, 1920, since which time many other installations have been made.

The Coast cracking process was first installed in the West Tulsa refinery of Cosden & Company and today Cosden has 100 units in operation. The Pan American refinery, also in West Tulsa and now owned by Mutual Oil, installed 20 Coast stills. Several other Coast process installations have been made.

The Sinclair Refining Company controls the Isom process which it has installed at its East Chicago, Argentine, Houston and Marcus Hook refineries.

After several years of experimental work the first commercial installation of the Jenkins cracking process was made at the plant of the American Gasoline Corporation, Kansas City, Mo., in the winter of 1921-22. Several Jenkins installations have been made since that time.

Basic Idea Not New

From the foregoing it is obvious that practically none of these cracking processes had developed to the point of producing cracked gasoline in appreciable quantities before 1920, or even 1922, and it would appear that much of the credit for developing the idea of cracking is due to the pioneering work of Dr. Burton and his associates. That the basic idea of cracking was known, and that it was practiced in a very limited way as early as about

(Continued on Page 117)

Oil Field Workers Display Keen Humor

Must Be Real Men to Make Good. Modern Field Camps and Amusements Quite Different From the Old Days

By Ralph T. Baker

Near a wildcat well in the State of Kansas, there is a neatly rounded mound of earth about 7 feet long, 2 feet wide and 18 inches high. A heavy concrete shaft stands imposingly at one end. The casual visitor immediately wonders why they bury drillers so close to the drilling wells. Upon closer inspection, however, the concrete headstone is found to bear the inscription: "He asked how deep we were."

The visitor arrives at the conclusion that the deceased was not a member of the drilling fraternity, but was one of the thousands of curious and inquisitive visitors who visit every wildcat drilling operation from the time timbers are dumped on the ground until the hole is completed. The drilling crew is compelled to answer innumerable questions during the time drilling is in progress, but the most frequent offender in the question line is the one quoted above, together with its many variations.

The inscription at the headstone near the Kansas wildcat is good enough for all practical purposes and draws many laughs from outsiders as well as members of the field forces who make it a practice to visit the well. The driller, however, did not complete the statement which might serve as a suggestion for all other visitors. The inscription might have read more appropriately as follows: "He asked how deep we were, and he did not carry a chew."

Hard Working Humans

Scouts who are familiar with drillers everywhere are firm in the conviction that the men who make the holes which produce the oil are ordinary humans after all. Citizens who are not acquainted with them and their ways may get the impression that they are a gang of cuthroats and tough-nuts, who are doing rough work because they are rough men, physically, morally and every other way. It is true that the average "tour" man works longer and harder than many other laborers, but it is also true that he has a sympathetic nature, a keen sense of humor, and a lot of good common sense, in addition to a mechanical ingenuity which enables him to make a success of a task at which many men fail, which is that of drilling for oil.

Drillers have a way of taming the new roustabouts and apprentice tool dressers which shows their true nature. There is a time-worn bit of field psychology running among the men who work on the derrick floor which points out the necessity for trying all new men before placing confidence in them or making them real friends. It is much the same spirit that governs lodge and fraternity initiations. The rough stuff comes first. If the novitiate stands the tests, which are guaranteed to try his muscles as well as his spirit, he is voted a "good fellow" by the other members of the crew and admitted into full membership. But if he balks at some order, no matter how disgusting, he fails to win the coveted place in the hearts of his fellow-workmen, and he will soon learn that he is not wanted about that particular rig. His exit from the scene is then a matter of a few days at most.

"Toolies" Are Initiated

Practical jokes as well as back-breaking toil are used on the new "toolies" as a part of their initiation. There is a trade trick in handling the heavy equipment, used in drilling oil wells, which enables the experienced men to work with less effort and more accuracy. The initial effort of some embryo tool dressers are ludicrous. They soon get the idea that everything about a derrick floor weighs at least a ton or more. Backs are strained, muscles severely punished and a lot of fruitless effort is lost in the first few days of a tool dresser's life. During this time, the other members of the crew have not been giving much advice to the new man, who has been compelled to learn by watching the movements of the others, rather than by practical instruction.

After long hours of hard labor at the well, the new man often is sent through the brush from one derrick to another in a fruitless quest for such mythical pieces of equipment as "left-handed monkey wrench," "a sky-hook," or "a straight-hook." The drillers on the nearby wells seem to know the game, as they immediately dispatch the novice who comes up for the mythical equipment to some far-distant point, where he finally gets a heavy bar of some kind and returns to his starting point. His chagrin is apparent when his "boss" tells him that he has brought the wrong tool and that he must return it immediately. The game continues until the novice tumbles to the fact that he is being "kidded" after which the teasing stops, temporarily, if the new man accepts the punishment in the right spirit.

Boarding House Stunts

Many other stunts are tried on old as well as new men. The novice at times gets a chance to go for a wrench to "take the horns off the anvil," which is a variation of the fetch and carry program. Some men were known and often hated for their ability as practical jokers. Much of the joking comes during the meal hour at boarding houses, old drillers say. One favorite stunt is to pass the butter to a newcomer in such a fashion that he would plunge his thumb into it. Profuse apologies then provoked prolonged applause.

One amusing stunt followed the drillers from the Eastern fields to the Mid-Continent. It was the custom in those days for the drillers in Eastern fields to shut down operations over Sunday. After getting up steam at midnight on Sunday night, the first act of the driller on tour was to run the bailer to see that the hole was clear before lowering the drilling tools. Light was furnished by the "yellow dog" kerosene torches, the turbo-generator being unknown at that time.

During the absence of the driller from the well over Sunday, some wags were accustomed to hang a dummy in the derrick, attached to the sand line, so that when the bailer was run, the figure would be scraped from the line at the casing head and fall to the floor in front of the driller. The hazy light from the "yellow dogs," the midnight hour and the bouncing dummy generally served to give the unsuspecting driller a real and personal fright. Some drillers were reported to have run away from the rig and allowed the bailer to crash to the bottom, as a result of the effectiveness of the joke.

Recreation Limited

Practical jokes, kid-stuff and playing about the derrick floor has been and still is a rare thing, most drillers declare. The universal shift on standard drilling tools has always been 12 hours. Hard work must be done during this period, meals must be consumed before and after work and several hours of sleep are necessary in order to work efficiently during the next day. Drillers in the Eastern fields often walked several miles to and from their work. This gave them little time for anything except working, eating and sleeping and as a result their recreation was usually limited to the days when operations were shut down or they were waiting for a new job.

On such occasions, plain and fancy loafing, with sleep as a variation, was the order of the day, according to the older men who were drilling wells at that time. If the men were near a boom town, they occasionally had a turn at the bright lights. Boom towns in the oil fields are much the same whether they are located in West Virginia, Oklahoma, Wyoming or California. Time has little to do with changing these characteristic places and the same general characteristics have followed them from the Bradford days down to the present Cromwell boom.

"After a man has worked several weeks in the sticks, without seeing anybody except the contractor and the other men at the well and boarding house, he is just like a kid let out of school, when the well finally is finished, he is paid off and the bright lights of town appear," said one man who has had years of experience in the oil fields. It is easy to see the reason why hard play and hard amusements are the ones that appeal to the men who have been bucking the hardest kind of work for several weeks."

Were Good Spenders

Every field has its story of historic "parties" given by field men who had been out of touch with the world for several weeks and returned to the oil field towns with the intention of painting them red. Thousand dollar rolls were melted in days and sometimes hours under the influence of the leeches of the boom towns. The men were then content to get back to some far-removed drilling well and save up another stake. The tale of wild spending has been varied at times by the men who were supporting families and others who shrewdly invested their earnings in acreage. Many successful operators of the Mid-Continent, who are wealthy today, owe their starts to wise expenditure of the money they earned on the derrick floor in the Eastern fields.

A trip through the oil fields today will leave little doubt that the field men are still doing a large amount of heavy work, regardless of the development of labor saving devices around a derrick. Heavier drilling equipment has necessitated many changes. It is true, according to many men, that the men in the oil industry have kept pace with the changes that have affected the workers in other lines of industry during recent years.

Some of the old-timers feel that the companies have been forced to spend too much money to care for their employes. Others believe that the oil industry has merely kept up with the development of a personal interest as shown in other branches of industry. In the old days, the crew was set down at the well and the contractor returned to the city and on many occasions did not return oftener than once or twice before the completion of the well. The men were forced to board with some nearby farmer. If the farmers or boarding-house keepers were not friendly to the oil field men, the men were forced to find a boarding place at some more distant house. This fact added an hour of walking to and from work and lengthened the tour to 14 hours without meals. When the meal was finished, the men were ready for sleep or work as the case might be. Little fun or recreation was the general rule.

Conditions Improved Now

In marked contrast today are the fine camps, with neat boarding houses for the unmarried men or cottages for the families of the married men. The latter are generally grouped around the storage yards, equipment sheds, headquarters and operating offices of the camp. Neat concrete sidewalks and graveled driveways mark the streets about which the buildings are grouped. All modern conveniences are usually furnished. In many of the camps, the companies furnish club houses for reading and smoking, together with pool or billiard tables. An innovation of recent date is found in the radio sets that have been installed in many fields. Dancing, social parties and other community affairs are also scheduled periodically at many of the camps.

One of the latest innovations for the benefit of oil field workers is found in the installation of a golf course in the Burbank Field where the drillers and tool dressers, gasoline plant operators and superintendents may partake of the sport which was formerly thought to be one for millionaires only. In many respects also, the oil worker is given better care than his fellow-workman in other industries. Company transportation has done much

(Continued on Page 120)

Fuel Oils Firm Despite Crude Cuts

Prices Unchanged Due to Strong Demand in Group 3. Gasoline Weak With Prices on all Grades Lower. Large Purchase of Cylinder Stocks

By C. O. Willson

The long expected reduction in Mid-Continent crudes by the Prairie Oil & Gas Co., coupled with a decline of 1 cent in the gasoline tank wagon service station prices in the Standard of Indiana territory were the principal developments affecting the Group 3 (Oklahoma) refined market during the past week. These important actions, although they have been expected for weeks by many, served to weaken the gasoline market and bring still lower prices on all grades. These reductions to date are indisputable evidence that the refinery market on gasoline had not fully discounted reductions in crude and tank wagon prices, although the decline in the refinery prices had been underway since February. The decline of ½ cent in U. S. Motor (New Navy) gasoline developed within a few days after the Prairie's action and other grades, including naphtha, experienced approximately the same reduction. There was also a decline of ¼ to ½ cent in natural gasolines and blends.

Other products occupy practically the same price position that they did last week, with the exception of wax, which is slightly higher. This fact, especially in the case of fuel oil and gas oil, was considered significant and is responsible for a decidedly bullish position on the part of many refiners as to the future of fuels over the next few months. No runaway market is expected, but it will greatly aid the refiners over the balance of the year if fuel prices on the open market can be brought more in line with the percentage contracts, which are based on the price of crude, a type of sales agreement which covers the bulk of fuel oil output in Group 3 and other parts of the Mid-Continent area.

Effect of Crude Cut

The action of the Prairie Oil & Gas Co. in meeting the posted crude schedule previously adopted by the Sinclair Refining Co. reduced the amount received by refineries on these contracts. These contracts with railroads are not all the same, but so far as known all are based on crudes above 33 degrees gravity and these are the only grades to date which have been affected by the crude reductions of the major purchasers with the exception of the Magnolia Petroleum Co.

Many contracts are based on 60 per cent of the changes in crude of 36 to 38.9 degrees gravity and since this has been reduced 25 cents under the new Prairie schedule, refiners are obtaining 15 cents a barrel less than they were for the fuel oil output. This gives a net price to the refiners which varies from from $1.05 to $1.25. It will be noted, despite the reduction, that the contract price is still from 25 to 50 cents higher than the present spot market and herein lies the real significance of the better tone in the fuel oil spot market previously mentioned.

It is no secret that the railroads of the Southwest which are heavy contract buyers from Group 3 refiners have been dissatisfied with their contracts. Most of these contracts were made around the first of the year when the spot market was strong and when spot prices were approximately the same or more than 60 per cent of crude of 36 to 38.9 degrees gravity or any grade used as a base price. There was also the further fact that the spot market was relatively high practically all of last year, so that the refiners occupied a strong position when the time came for the renewal of the contracts.

Contract and Spot Prices

Due to this situation refiners were able to secure as good and in many cases better contracts than they had the previous year. However, within two weeks after most of the contracts had been made the spot market started the slump which has continued with few interruptions to the present time. It is not surprising that the buyers began to question the value of these contracts to them when they were able just before the latest crude price reduction to buy on the spot market from 30 to 65 cents under their contract price.

It is apparent what the position of the refiners would be the first of next year in the renewal of the railroad contracts if the spot price situation of the past few months continued over the balance of the year.

Lower spot market prices generally follow a crude reduction, even when the product is relatively strong and many buyers have been staying out of the market in Group 3 as much as possible for weeks in expectation of the crude reductions which materialized last week. However, as previously stated, the market has continued firm and at this writing there is no indication of weakness. So far as Group 3 is concerned buyers themselves agree there is little material available for spot shipment and they have not been able to interest the refiners in large orders for delivery over the balance of July and August.

Real Basis of Strength

The real basis for the strength in the spot market of course lies outside of Group 3. Those who keep in touch with general conditions point to the California and Mexican situation as the fundamental cause of the better tone which has been apparent in the coast sections for weeks and which is now being reflected at inland points. The decline in the production of low gravity crudes in California has forced important buyers to look for new sources of supply already and the present political situation in Mexico does not hold out much hope of rescue from the fields of that section. Last year many large buyers were able to make very favorable contracts with California producers, due to large flush production of new fields. Some of these contracts have already expired and others will within the next few months. Producers do not have the supplies to renew these contracts for the same quantities.

Reflecting this situation, it will be recalled that despite the slumping market in the Mid-Continent area and other inland points the past few months, the bunker fuel oil and California fuel oils prices have been firm. They have usually advanced, in fact, when any changes occurred. Refiners in Mid-Continent have recently received inquiries from buyers for shipment to the Gulf Coast. Many of the trade also believe that buying at inland points will increase over the remainder of the year. The slowing up of the industries after the first of the year was a direct factor in the weak fuel oil market in the Mid-Continent. Those in touch with so-called "smokestack trade state there has already been some improvement and with fall and winter months approaching there is also the increased seasonal demand. Finally there is the record demand for distillates for home burners. This demand will also tend to reduce the amount of fuel oil available and will aid the market to that extent.

Effect of Crude Change

It is apparent in most cases the crude changes have not greatly aided the independent refiner who buys his crude supplies. In a majority of the cases the reduction amounted to 25 cents, although a few operating on the higher gravity crudes benefited with a 50 cent reduction. But with ½ cent drop in gasoline prices and 15 cents a barrel drop in the fuel oil contract prices, the loss in revenue about offsets the lower crude prices in many instances. Several of the south Oklahoma group of refiners are in a worse position than they were before the crude reductions.. The crude prices were not reduced and they have been compelled to lower their gasoline and contract fuel oil prices the same as the northern group.

Gasolines and Naphtha

U. S. Motor gasoline declined to a low of 8 cents in Group 3 within a few days after the Prairie's crude reduction became effective July 17. A few scattered sales were reported ⅛ to ¼ cent under this price to marketers, but so far as Group 3 was concerned there was not enough of this business to constitute a market. Several refiners were still selling direct to the trade as high as 8¾ cents. Most refiners reported a slow movement. They accounted for this development as due to the fact that many jobbers got out of the market in expectation of lower prices. The 1 cent decline

(Contnued on Page 111)

REFINED MARKET BAROMETER

Crude and gasoline tank wagon reductions, applying to practically all fields and consuming areas except the West Coast, were reflected in a generally weak gasoline market at the refineries during the past week. Gasoline prices are lower in most refining areas with buyers inclined to stay out of the market in anticipation of further reductions. Reports indicate a heavy gasoline consumption. Fuel and gas oil prices are generally firm despite the crude reductions, a fact which has greatly encouraged refiners as to the probable market trend over the balance of the year. Kerosene and distillates prices continue generally firm with fair movement reported from all sections. Natural gasolines declined except in California where the market has strengthened. Lubricating market sluggish with prices lower where there are any changes. Wax prices are higher in some sections.

Mid-Continent—Crude reductions in all fields brought further weakness to the gasoline market and prices are lower in all areas. Gasoline buying confined to the domestic market. Slow up in demand for natural gasolines and prices are generally lower. Fuel and gas oil prices unchanged with fair to strong demand for material at present prices. Neutral prices lower with wide spreads in prices asked by refiners. Wax prices slightly higher. Kerosenes and distillates unchanged.

Atlantic Seaboard—General tank wagon reductions in eastern territory weakened gasoline market. Little change in other products. Export shipments slightly lower than previous week.

Pennsylvania—Gasoline prices at refineries fairly firm despite tank wagon reductions in Atlantic Refining Company territory. Improved movement of fuel oils, kerosene and wax with no general price changes. Neutrals and cylinder stocks weak with prices lower.

West Coast—Outstanding feature of the week was the improved demand for natural gasolines. Two large marketing organizations by buying up practically all spot material available were responsible for advance of ½ to 1 cent. Engine distillates are also slightly higher. Large export shipments of gasoline expected within 30 days. No general changes in other products.

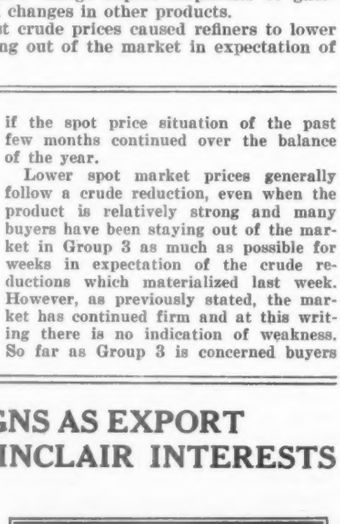
Gulf Coast—Reductions in Gulf Coast crude prices caused refiners to lower prices on refined products. Buyers staying out of the market in expectation of further declines.

A. C. WOODMAN RESIGNS AS EXPORT HEAD OF SINCLAIR INTERESTS

NEW YORK, N. Y., July 22.—A. C. Woodman, vice president and director of the Sinclair Consolidated Oil Corp., and one of the outstanding figures in domestic and export marketing circles, has resigned, according to an announcement here. Mr. Woodman is widely known within the industry, due to the fact that he was for a number of years president and the active head of the Union Petroleum Co., a large export and domestic marketing organization. He continued as head of that company when a controlling interest was purchased by the Sinclair company, about five years ago.

When the Union Petroleum Co. lost its identity last fall, Mr. Woodman was made a director and vice president of the Sinclair Consolidated Oil Corp. He was in charge of the export division of the Sinclair Refining Co. (Eastern Division) and was also connected with domestic sales. At that time he removed his offices from Philadelphia to New York.

Although no announcement has been made it is generally understood that Mr. Woodman will head a new petroleum marketing organization.



A. C. Woodman

Natural Gasoline Operators Meet

Practical Discussion of Technical Problems at Second Regional Meeting of Plant Men Held at Drumright

By Ralph T. Baker

Judging from the attendance and enthusiasm with which the papers on technical subjects were received, the second regional gasoline plant operators' meeting, held at Drumright, Okla., July 17, indicates that the series of meetings planned for the benefit of the field men will be one of the most important accomplishments of the Association of Natural Gasoline Manufacturers since its start three years ago. Nearly 150 operators were present at the three sessions. Arrangements are being made for meetings in the Okmulgee and Burbank area in Oklahoma and in the Breckenridge area of North Texas.

W. A. Melton, of the Liquified Petroleum Gas Co., as chairman introduced A. V. Bourque, secretary of the Association of Natural Gasoline Manufacturers, who showed the association was responsible for the adoption of specifications for natural gasolines and had been active in legislative and rate affairs.

R. R. Owen, superintendent of the gasoline department, Marland Refining Co., told of the initial regional meeting for operators in the Tonkawa Field. Technical libraries had been started at the plants in that area as a result of that meeting and the men were holding a series of social gatherings for the Tonkawa operators.

"The best thoughs in the gasoline industry come from the men in the plants," said Mr. Owen. "For this reason, the superintendents and executives of the gasoline companies want to get the men at the plants interested in the manufacturing problems. The executives are watching the fellow with the ideas and the fellows who are trying to improve themselves in their work. The plant libraries will afford the operators a chance to get a better technical understanding of their work at a minimum cost to themselves."

Ignition Troubles

"Ignition is the biggest single trouble in gasoline plant operation," declared Mr. Melton in introducing O. W. Prescott, of the Drumright Repair & Ignition Co., who spoke on "Care of Magnetos." Mr. Prescott and the operators discussed many intimate features concerning the breaker box, which was considered the source of most trouble. He showed that more magneto trouble followed overloading the compressors than when they were allowed to run with normal or light loads. He advocated the purchase of identical parts from manufacturers rather than parts made by other manufacturers or machinists for use in repair work. Inferior windings and parts are sure to cause trouble at a later date, he declared.

"The spacing of the points is the most important item," he said. "Excess oiling often causes trouble. Oil will drip from the bearings to the windings and in time eat through and loosen the insulation, causing shorting. The oiling of all magnetos in the plant should be given to the care of one man. They should not be oiled oftener than once each week or possibly once every two weeks."

Use of the platinum file in filing down the breaker points which appear corroded was condemned by several operators. Cleaning and adjustment of these delicate parts should be left to specially trained men with the proper equipment, several men asserted. The practice of dipping the magneto in gasoline to clean it of grease and dirt was also condemned, as it results in damaged insulation and shorting. Several good records in engine operation were reported, some men declaring their machines had been in operation continuously for two years. The discussion also involved the effect of compression and speed, as well as the timing on magneto operation.

At the afternoon session, William McCaig, painter for the Marland Refining Co., was introduced in the guise of a billposter who interrupted the meeting. He remained to talk about "Loyalty," and was given a hearty demonstration.

Water Treatment

Most of the operators considered some method of treatment necessary before using the water which they found in the vicinity of their plants. The paper on "Water Treatment," by George M. Massen, of Kansas City, Mo., district manager for the Dearborn Chemical Co., showed that an accurate mineral analysis was necessary to determine the treatment which should be used. He pointed out the minerals present in most Oklahoma waters which produce incrusting solids that cover condenser coils and gather inside boilers. He also asserted that several nonincrusting minerals, when present in the water, had a corrosive action on the metal, eating out boilers and pipes.

"Boiler feed water should be treated," Mr. Massen declared. "The treatment becomes a matter of control of the substances contained in the water. Cooling water also should be treated for the benefit of the equipment and efficient operation."

Mr. Massen stressed that plant operators should not take their boiler feed water from their cooling systems. In so doing, he declared, they would be taking into their boilers water which had already received a concentration of the mineral constituents due to the evaporation when in contact with the hot vapor coils. Thus the water for boilers from this source would have a larger mineral content than the raw water. Operators were warned against introducing oil into boilers in an attempt to loosen scale deposits. The consequences of using untreated water were reported in the announcement that several plants using raw water were accustomed to shutting down their boilers every 90 days for retubing.

Oil Circulation

A. J. Schlosser led discussion on "Methods of Oil Circulation." He traced the course of the oil through the average oil absorption plant, commenting upon the various articles of equipment at important points. He discussed the types of pumps, including direct action reciprocating, centrifugal and rotary types. In discussing the changes in absorber design, he showed that the early absorption plants were equipped with horizontal absorbers, in which the oil flowed by gravity from one absorber to another in series. In the first vertical absorbers it was considered impractical for the gas to flow at a greater velocity than 50 feet per minute. In the modern vertical absorbers, some of which are 50 feet in height, the gas is now passed through the absorbers at the rate of 125 feet per minute without loss of oil.

The methods of taking the oil from the bottoms of the absorbers, operation of settling and vent tanks, oil heat exchangers, oil and water separators, drips and stills were brought out by Mr. Schlosser.

Absorber Baffles

A large exhibit of typical absorber baffles together with drawings and charts was included by Dean E. Foster of the Foster Engineering Co. He showed that 25 various devices were in common use as baffles.

"The purpose of baffles is to bring about an intimate contact between the gas and the absorption oil," Mr. Foster said. Baffles have been in use only since the advent of the vertical absorption tower. The vertical absorbers differ widely in operation from the older horizontal types as the vertical absorbers have little pressure drop while the horizontal absorbers show a high pressure drop. This point is of vital concern to operators as a high pressure drop involves an increased capital investment.

"In the vertical absorbers, the oil as admitted at the top comes in contact with the almost-denuded gas, and takes up some non-condensable gases. This is lost when the oil comes in contact with and absorbes the high gravity condensable gases farther down in the tower. At a lower point, these condensable vapors are forced out of the oil for lower gravity vapors, which are absorbed and so on until the oil at the bottom of the absorber contains relatively small proportions of the high grade vapors and a large proportion of the lower, easily condensed vapors. The principles of selective absorption, as this is termed, are aided by proper baffling.

"Baffling material and baffle construction, in order to make possible the maximum recovery of gasoline from gas, should conform with each of the following principles which are standard specification: They should have the greatest possible gas space; greatest possible contact area; an even distribution of oil; channeling of the oil should be avoided, gas and oil should be kept in intimate contact as long as possible; gas should be distributed equally throughout the tower; oil should secure a maximum saturation, baffles should be installed and kept up at low cost in an easy and efficient manner, and baffles should be made of such material that they will not be easily damaged."

Scrubbers and Distribution

Discussion of the principles of the Feld scrubber, now being used as an absorber at some plants, brought out that this scrubber is a vertical tower divided into compartments, through the center of which a rotating shaft runs. In each compartment, a series of several nested cones revolve on the shaft. These cones receive the absorbing oil and throw it up due to the rotating action. The oil breaks into mist as the oil hits small holes punched near the edge of the cones. The gas flowing through the chamber accordingly is brought into contact with a greatly enlarged area of oil. Cooling of the oil is secured by means of coils in the cones.

The operators in their comments brought out the fact that a proper distribution of the absorbing oil at the top of the absorber tower was necessary for efficient absorption of the gasoline vapors. The gas also should be introduced uniformly to maintain a uniform velocity as it rises in the absorber thus keeping the oil from siphoning out with the gas. Oil strainers also were considered excellent devices for insuring efficient operation.

J. A. Edwards, of the Marland Refining Co. showed a number of excellent lantern slides in connection with his talk on "Plant Lubrication." He gave a brief description of the making of lubricating oils of various grades, showing the tests for viscosity, flash and fire, hydrometer readings and the operation of the colorimeter, emulsifier and carbon residue apparatus. He explained the slides showing the importance of each test in its application to finished lubricants. He declared that the most important test of a lubricant was that showing the viscosity and the next most important test was the cold test.

Lubrication and Temperatures

The operators were particularly interested in one slide which showed the relative speeds of the various layers of oil within a rotating bearing, showing the oil next to the bearing traveled with the bearing at a much greater speed than did

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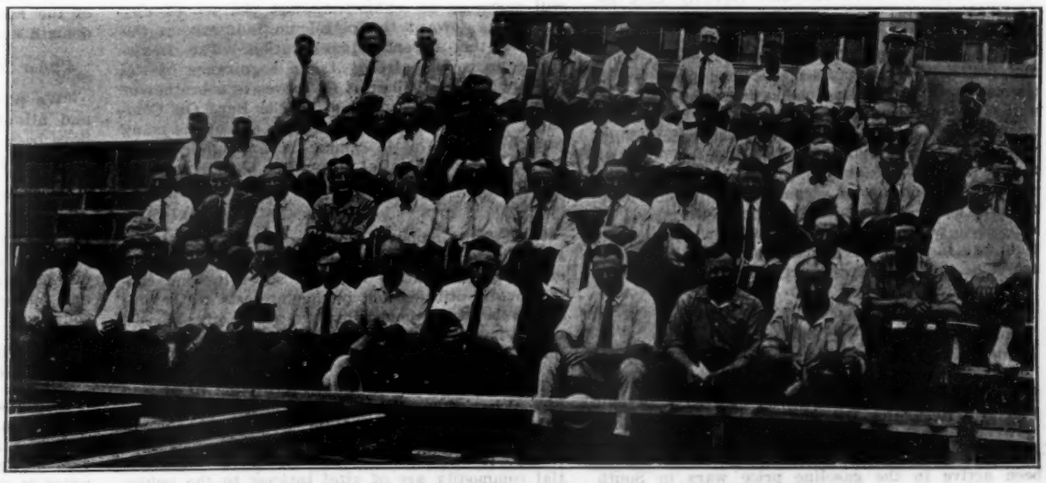


Operators who attended morning session second regional meeting at Drumright.

Oil Planks in Political Platforms

La Follette to Lead in Attack on Industry, Claiming Credit for the Patent Suits Begun by Attorney General Stone

By L. M. Fanning

Oil in the Presidential Campaign

To just what extent oil will figure in the debates of rival candidates for the Presidency and Vice Presidency of the United States is to a degree determinable now that all major party candidates have been nominated. Probably the leading oil orator during the next few months will be Senator Robert M. LaFollette of Wisconsin Reverting to comment on national legislative and political tendencies appearing in The Oil and Gas Journal for many months, it might be inferred that the oil industry has not been taken entirely by surprise at the present turn of events. Close students of national affairs were agreed that the naval reserve disclosures would figure prominently in the presidential campaign and that a third party movement would become a reality given anything like a fair political break. As it is, Senator LaFollette has read himself out of the Republican party and has announced his intention of running for President as an "Independent Progressive" in all States of the Union. It is a foregone conclusion that Senator LaFollette and his lieutenants will in their campaigning dwell upon Teapot Dome, but, further, that emphasis will be placed on the Senator's activities in relation to the oil industry generally. The Senator introduced the resolution for an investigation of the naval reserve leases which was prosecuted by Senator Walsh. He was chairman of the Senate Committee on Manufactures and active in the subcommittee which investigated the oil industry in 1923 and which charged Standard Oil monopoly and price manipulation. Among this committee's recommendations was one that the Department of Justice should immediately institute a rigid investigation into all claims for basic patents on pressure still processes used in the production of gasoline.

* * *

LaFollette May Take Credit for Patent Suit

The LaFollette report stated that "there is no doubt that as a result of these patents, now largely controlled by Standard Oil Companies, the production of gasoline is greatly limited." It declared that if any such patents were obtained by misrepresentation, or unlawfully, or improperly, or are being used through baseless threats of suits or otherwise to limit the production of gasoline, suits should be instituted by the Government to declare such patents void and thus permit the process now claimed to be covered by such patents to be thrown open to general use. The suit recently filed by Attorney General Stone in Chicago against some 50 oil companies charging violation of anti-trust laws in connection with cracking process patents and with licensing agreements can readily be claimed by LaFollette as emanating from his committee's recommendations whether that is strictly its origin or not. In any event, the patent suit, which may be accepted as filed in good faith by the Department of Justice after a prolonged and earnest investigation of a complicated patent situation, is going to have its political effect and be subject to political controversy whether its institution was inspired for political purposes in the interest of the Republican party or not.

* * *

Senator LaFollette's Platform Regarding Oil

Moreover, Senator LaFollette was expected to introduce a radical oil bill in the last Congress, this apparently having been prevented by his illness. He has assumed a leadership in attacking the oil industry, and his associates and adherents have been active in the gasoline price wars in South Dakota and other Middle Western States. Senator LaFollette's platform as presented to the Progressive convention affirms that "under the principle of ruthless individualism and competition, that government is deemed best which offers to the few the greatest chance of individual gain. Under the progressive principle of cooperation, that government is deemed best which offers to the many the highest level of average happiness and well-being." Under the "Program of Public Service" contained in the platform is the following provision:

"Public ownership of the Nation's waterpower and creation of a public superpower system. Strict public control and permanent conservation of all national resources, including coal, iron and other ores, oil and timber lands, in the interest of the people. Promotion of public works in times of business depression."

At the Republican National Convention in June the LaFollette platform ratified by the Republican voters of Wisconsin at the April primaries, was presented and contained some further references directly or indirectly to oil, as follows:

"We pledge a complete housecleaning in the Department of Justice, the Department of the Interior and the other executive departments. We demand that the power of the Federal Government be used to crush private monopoly, not to foster it.

"We pledge recovery of the Navy's oil reserves and all other parts of the public domain which have been fraudulently or illegally leased, or otherwise wrongfully transferred, to the control of private interests; vigorous prosecution of all public officials, private citizens and corporations that participated in these transactions."

* * *

Republican Candidates, Platform and Oil

The Republican party will be under attack due to the naval oil reserve disclosures, but the Republican platform does not directly touch upon the recent investigations. It is assumed that President Coolidge will point to the various suits instituted as the fair and legal means of determning the questions at issue, that by the time the campaign is well in motion he will have decided upon an oil conservation policy as a result of investigations being made by his Oil Conservation Committee and that the institution of the anti-trust patent suit will serve as an exhibit against charges of any favoritism toward the petroleum industry on the part of the present administration. The Democratic press has already taken cognizance of the fact that General Charles G. Dawes is a brother of Beman G. Dawes, president of the Pure Oil Company. This is mentioned simply as one of the many ways in which oil is coming in for public notice during the presidential grapple. The Republican platform stipulates under the heading "Government Control:"

"American industry should not be compelled to struggle against government competition. The right of the government to regulate, supervise and control public utilities and public interests we believe should be strengthened, but we are firmly opposed to the nationalization or Government ownership of public utilities."

Regulation of the oil industry through regulation of coal has often been hinted. The Republican platform says as regards coal:

"The price and a constant supply of this essential commodity are of vital interest to the public. The Government has no constitutional power to regulate prices, but can bring its influence to bear by the powerful instrument afforded by full publicity. When through industrial conflict its supply is threatened, the President should have authority to appoint a commission to act as mediators and as a medium for voluntary arbitration. In the event of a strike the control of distribution must be invoked to prevent profiteering."

Under "Conservation" the Republican platform has this to say:

"We believe in the development, effective and efficient, whether of oil, timber, coal or water power resources of this Government, only as needed and only after the public need has become a matter of public record, controlled with scrupulous regard and ever vigilant safeguards against waste, speculation and monopoly. The natural resources of the country belong to all the people and are a part of an estate belonging to generations yet unborn. The Government policy should be to safeguard, develop and utilize these possessions. The conservation policy of the nation originated with the Republican party, under the inspiration of Theodore Roosevelt. We hold it a privilege of the Republican party to build as a memorial to him on the foundation which he laid."

* * *

Democratic Candidates and Platform on Oil

The naming of John W. Davis as Democratic candidate for President removes a threat that as between the two major parties, the campaign will be fought with the free use of liquid fire. The naming of Governor Charles W. Bryan of Nebraska for Vice President, however, recalls his activities in that State to lower the price of gasoline. Governor Bryan reflected the notoriety of Governor McMaster of South Dakota in this direction. Under the heading "Republican Inefficiency and Corruption," the Democratic platform says in part:

"We arraign the Republican party for attempting to limit inquiry into official delinquencies and to impede, if not to frustrate the investigations in which in the beginning the Republican party and leaders assented, but which they later regarded with dismay. . . . These investigations revealed the criminal and fraudulent nature of the oil leases which caused the Congress, despite the indifference of the Executive, to direct recovery of the public domain and the prosecution of the criminal."

Under "Conservation" the platform says in part:

"We pledge recovery of the Navy's oil reserves and all other parts of the public domain which have been fraudulently or illegally leased or otherwise wrongfully transferred to control of private interests; vigorous prosecution of all public officials, private citizens and corporations that participated in these transactions; revision of the water power act, the general leasing act and all other legislation relating to the public domain that may be essential to its conservation and honest and efficient use on behalf of the people of the country."

Respecting "Regulation of Corporations Controlling Necessaries of Life" the platform says:

"We pledge the Democratic party to regulate by governmental agencies the anthracite coal industry and all other corporations controlling the necessaries of life, where public welfare has been subordinated to private interests."

Billion Dollar Unit in Oil Business

Facts About Real Size and Operation of Standard Oil of New Jersey Reveals It As Representative Industrial Enterprise

By N. O. Fanning

NEW YORK, July 21.—A great deal of interest was manifested in Wall Street a few days ago when the National City Bank issued a financial statement showing that its assets had for the first time passed the one-billion-dollar-mark, making it the first billion-dollar bank in the country. The oil industry had its first billion-dollar unit four years ago, when the Standard Oil Company of New Jersey reported total assets of $1,102,312,595. At the close of 1923 the company's assets had increased to $1,148,004,953.

The public scarcely realizes the size and ramifications of an oil company like Standard Oil Company of New Jersey, nor does it generally see it as a representative industrial enterprise side by side with big units in other industries. Unfortunately, the oil industry is too often looked upon as a simple money-making proposition, and too seldom as a plain, hard business proposition.

Information is now available which shows the real size and construction of the Standard Oil Company of New Jersey, and which reveals it as a representative industrial enterprise. Among other facts, the outstanding one probably is that the company employs approximately 91,000 persons and its annual payroll amounts to about $110,000,000. The number of stockholders is in the neighborhood of 60,000. Without allowing for a comparatively small amount of duplication, here are more than 150,000 persons who have a direct and vital interest in the affairs of this single oil company.

Personal Equation

The personal equation should be the most important element in the study of any organization, whether it is an industrial corporation, a welfare organization or other representative body of combined human endeavor. When a single company has 150,000 or more persons directly concerned with its operations it ceases to be merely a company. It is an institution, with the reservation that it has to earn money in its operations in order to be what it is. It is not like an institution that must depend entirely upon endowments for its existence. Incidentally, the idea that an industrial organization like Standard Oil of New Jersey is operated for the benefit of a hand full of men is exploded by the fact that there are 150,000 persons sharing in its profits, either as worker or as stockholders.

That part of the gross income of Standard Oil of New Jersey which is not set aside as a reserve for emergencies, goes not only to employes and stockholders, but is paid to other industries for materials and services, or else is paid in taxes to city, State and Federal bodies and thus contributes to necessary activities of the community. Although this applies to any corporation, large or small, which is operating at a profit, the matter is stressed in order to give that side of the picture of the largest oil company which does not correspond with the usual impression obtained by the public.

As Manufacturing Enterprise

Although present in every branch of oil activity, the basis of Standard Oil Co. of New Jersey is its refining properties. These properties are scattered throughout different parts of the world, but each refining unit is to a large extent a copy of the main refinery system at New York Harbor, best known as the Bayonne refinery. This system, with a capacity of 200,000 barrels daily, is the largest in the world. The refining of crude petroleum is said to represent the oil business at its best, in the sense that man's genius has full play, without the uncertainties involved in the production end of the industry. The problem of the refiner is to obtain the maximum value in finished products from each barrel of crude oil refined. Here again the outcome depends solely upon the personal equation, represented not only by those employed in actual operation of the stills, but by a corps of chemists and engineers employed at the Bayonne plant engaged exclusively in experimental work, to prevent the possibility of new ideas being overlooked due to the pressure of every-day work, and to assist in working out and developing such ideas.

The development of by-products and new uses for petroleum is more important than most people think. Just as personal efficiency in operation results in larger output from a given amount of work, the more that can be obtained from a given barrel of crude, the cheaper each gallon can be sold. The perfection of by-products, which probably constitute a little less than 10 per cent of the output of each barrel of crude refined, with the greatest efficiency, but which can be sold at prices much higher per gallon than either gasoline, kerosene, fuel oil or gas oil, makes it possible to charge less for the four principal products named. If every single refinery operated on that basis, the oil business would not have quite as many troubles.

Greatest of Refineries

The Bayonne refinery system of the Standard Oil Company of New Jersey covers approximately 2,500 acres. It is connected with the markets by means of motor trucks, railway cars, oil barges and tank steamers. It is connected with the fields from which it procures crude petroleum by means of pipe lines, the railways and tank steamer. It gets crude from the Appalachian fields, from the Southwest, from California, from Mexico and from Peru. Its output is marketed in the United States, West Indies, South America, Europe and Africa. It can be seen that the organization radiates from the Bayonne refinery system. On a smaller scale district operations are carried on from the smaller plants, including those of Standard Oil of New Jersey subsidiaries.

Refineries controlled by Standard Oil Company of New Jersey are as follows, with approximate daily capacity, in barrels:

Bayonne system	200,000
Baltimore	30,000
Parkersburg, W. Va.	3,000
Charleston, S. C.	10,000
Baton Rouge, La.	50,000
Baytown, Texas	10,000
Tampico, Mex.	12,000
Canada (5 plants)	30,000
Talara, Peru	10,000
Colombia	2,000
Teleajen, Rumania	10,000
Total capacity	367,000

These refineries, 15 in number, could consume 133,955,000 barrels of crude annually if operated at capacity every day in the year.

Production of Crude

The problem of supplying enough crude petroleum to keep all of these refineries operating is necessarily a large one, especially when the uncertainties of the production of oil is considered. It is estimated that in 1923 the Standard Oil Company of New Jersey produced only about 50 per cent of the crude which it used in its plant, and that it had to purchase at least 50,000,000 barrels from other producers.

The greater part of the crude petroleum produced or purchased by the Standard Oil Company of New Jersey has to be transported hundreds of miles to its refineries, especially to those located on the Atlantic Seaboard of the United States, and in Canada. This emphasizes the importance to the company of having available the necessary means of transportation. In most cases the crude is run through pipe lines from the fields to seaboard, where it is loaded on tank steamers and carried the greater part of the distance by water, an economical method of carrying oil in bulk long distances.

A rough estimate of the amount of oil carried from various sources in the company's tankers to the Atlantic Seaboard during June can be obtained from the movement of its tankers during the month. The figures are based on capacity of the vessels, and are given in daily averages:

From:	Bbls. Daily
Baton Rouge and New Orleans	36,000
Port Arthur district	2,000
Galveston district	38,000
San Pedro and San Francisco	43,000
Mexico	11,000
Peru	9,000
Total	139,000

The Atlantic Coast refineries of Standard Oil Company of New Jersey also obtain oil from the Appalachian, Central West and Mid-Continent Fields by means of the pipe lines that connect them with these districts.

The Standard Oil Company of New Jersey has the largest fleet of oil tankers in the world, and the largest fleet of ships flying the American flag. At present it not only uses all these vessels, but charters additional ships in order to handle its total business. Its fleet serves not only as one of the most important "cogs" in the wheel, but also to connect the various world wide producing, refining and marketing properties of the organization with one another.

This Is the Oil Business

The production of crude oil, which is practically the only highly speculative branch of the oil business, forms, as can be seen, only a small part of the company's activities. Nevertheless, it has a very large production organization, and, including its pioneering activities, involving geological surveys and examination of new territory in different parts of the world, some extremely remote, this part of its business is of great importance. The company probably has 5,000,000 acres of land under lease outside the United States, much of which is "prospective" oil territory.

But this picture of the billion-dollar organization, as can be seen, is not that of a highly speculative enterprise, but of an organization carrying on a large and sound business in one of the most essential products—in other words, a representative oil company, typical of the oil business as it is, not as many picture it.

"GOOD FICTION"

Representatives of the Standard Oil Company of New Jersey characterized as "good fiction" the reports in the financial district to the effect that the visit to Europe of W. C. Teagle, president, and A. C. Bedford, chairman of the New Jersey Company, was to fight the Sinclair Consolidated Oil Company for oil concessions in the northern provinces of Persia.

A denial was issued at the company's offices, where it was said that Mr. Teagle and Mr. Bedford, with their wives, have gone to Europe on a combination pleasure and business trip, the company having extensive interests in several foreign countries. Northrop Clarey, another representative of the company mentioned as going abroad with the group, is attending the conference of advertising men in London.

At the offices of the Sinclair Oil Corporation no statement was issued, but in one quarter it was pointed out that it has been generally known for some time that Standard Oil interests have objected to Sinclair activities in Persia.

One opinion was expressed that Mr. Teagle and Mr. Bedford while abroad will visit Rumania, where drastic legislation is under discussion. Taking exchange at par, the Standard of New Jersey has an investment of approximately $10,000,000 in Rumania, and it is believed that the visit of the officials to Europe may be to protest against the proposed legislation.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

CHICAGO DIST. (Based on Group 3)—	July 22		July 15		July 8	
50-52 450 end point (Naphtha)	.07¾	.08	.08¼	.08½	.08½	.09
56-58 450 end point	.07¾	.08	.08¼	.08½	.08½	.08¾
58-60 437 end point (U. S. Motor)	.08	.08¼	.08¾	.09	.09	.09¼
60-62 400 end point	.09¼	.09½	.10	.10¼	.10	.10¼
64-66 375 end point	.10¼	.10½	.10¾	.11	.11	.11¼
68-70 360 end point	.10¾	.11¼	.11½	.11¾	.11½	.11¾
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.07½	.07¾	.08	.08¼	.08½	.08¾
56-58 450 end point	.07¾	.08	.08	.08¼	.08½	.08¾
58-60 437 end point (U. S. Motor)	.08	.08¼	.08½	.08¾	.08¾	.09¼
60-62 400 end point	.09	.09½	.09¾	.10	.10	.10¼
64-66 375 end point	.10	.10¼	.10¼	.10½	.10½	.10¾
68-70 350-365 end point	.10¾	.11	.11	.11¼	.11¼	.11½
KANSAS—						
58-60 437 end point (U. S. Motor)	.08¼	.08¾	.09	.09¼	.09	.09¼
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.07½	.07¾	.08	.08¼	.08	.08¼
50-52 440 end point (Naphtha)	.07½	.07¾	.08	.08¼	.08½	.08¾
56-58 450 end point	.07½	.07¾	.08	.08¼	.08½	.08¾
58-60 437 end point (U. S. Motor)	.08	.08¼	.08¼	.08½	.08¾	.09
60-62 400 end point	.09	.09¼	.09½	.09¾	.09¾	.10¼
64-66 390 end point	.09½	.09¾	.10	.10¼	.10¼	.10½
64-66 375 end point	.09¾	.10	.10	.10½	.10½	.10¾
68-70 360 end point	.10½	.10¾	.10¾	.11	.11¼	.11½
NORTH LOUISIANA—						
56-58 450 end point	.08	.08¼	.08¼	.08½	.08½	.09
58-60 437 end point (U. S. Motor)	.08¼	.08½	.08½	.08¾	.09	.09¼
60-62 400 end point	.09½	.10	.10	.10¼	.10¼	.10½
64-66 390 end point	.10	.10¼	.10¼	.10½	.10½	.10¾
64-66 375 end point	.10½	.10¾	.10¾	.11	.10¾	.11¼
ARKANSAS—						
58-60 450 end point	.08¼	.08½	.08½	.80¾	.08¾	.09
58-60 437 end point (U. S. Motor)	.08½	.08¾	.08¾	.09	.09	.09½
64-66 375 end point	.10	.10¼	.10¼	.10½	.10½	.10¾
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.10¾	.11¼	.11½	.12	.11¾	.12¼
PENNSYLVANIA—						
52 Naphtha	.11½		.11½		.11½	
54 Naphtha	.11⅞		.12		.12	
56 Gasoline	.12		.12		.12	
58 Gasoline	.12¼		.12¼		.12¼	
60 Gasoline	.12¾		.12¾		.12¾	
62 Gasoline	.13½		.13½		.13½	
64 Gasoline	.14¼		.14¼		.14¼	
66 Gasoline	.15		.15		.15	
68-70 Gasoline	.16¼		.16¼		.16¼	
CALIFORNIA—						
54-56 437 end point (U. S. Motor)	.10½	.11½	.10½	.11½	.10½	.11½

*Colorado points.

NATURAL GASOLINE

CHICAGO DIST. (Based on Group 3)—	July 22		July 15		July 8	
Grade A, 72-78, under 375 e.p., rec. 90%	.07¾	.08	.08	.08¼	.07½	.07¾
Grade B, 76-82, 375 end point, rec. 85%	.07¼	.07½	.07½	.07¾	.07	.07¼
Grade C, 80-88, 350 end point, rec. 78%	.06¾	.07	.07¼	.07½	.06¾	.07
OKLAHOMA (Group 3)						
Grade A, 72-78, under 375 e.p., rec. 90%	.07¼	.07½	.07¾	.08	.08	.08¼
Grade B, 76-82, 375 end point, rec. 85%	.07	.07¼	.07¼	.07½	.07½	.07¾
Grade C, 80-88, 350 end point, rec. 78%	.06¾	.07	.07	.07¼	.07	.07¼
Grade D, 88-92, 350 end point	.06½	.07	.07	.07¼	.07	.07¼
NORTH TEXAS—						
Grade A, 72-78, under 375 e.p., rec. 90%	.07¼	.07½	.07½	.07¾	.07¾	.08
Grade B, 76-82, 375 end point, rec. 85%	.07	.07¼	.07¼	.07½	.07¼	.07½
Grade C, 80-88, 350 end point, rec. 78%	.06¾	.07	.07	.07¼	.07	.07¼
NORTH LOUISIANA—						
Grade B, 72-78, under 375 e.p., rec. 90%	.07	.07¼	.07¼	.07½	*.07¼	.07¾
Grade C, 76-82, 375 end point, rec. 85%	.06¾	.07	.07	.07¼	.07	.07¼
CALIFORNIA—						
68-80 380-410 end point absorption	.10	.11	.09½	.10½	.09½	.10½
78-84 350 end point compression	.10		.10		.10	

MOTOR NATURAL GASOLINE (BLEND)

CHICAGO DIST. (Based on Group 3)—	July 22		July 15		July 8	
58-62 437 end point	.07¾	.08	.08¼	.08½	.08½	.08¾
60-62 450 end point	.07¾	.08	.08¼	.08½	.08½	.08¾
64-66 450 end point	.07¾	.08	.08¼	.08½	.08½	.08¾
OKLAHOMA (Group 3)—						
60-62 450 end point	.07½	.07¾	.08	.08¼	.08½	.08¾
64-66 437 end point	.07½	.07¾	.08	.08¼	.08½	.08¾
68-70 430-435 end point	.07½	.07¾	.08	.08¼	.08½	.08¾
NORTH TEXAS—						
58-62 440 end point	.07½	.07¾	.08	.08¼	.08½	.08¾
58-60 450 end point	.07½	.07¾	.08	.08¼	.08½	.08¾
PENNSYLVANIA—						
*60-62	.11½		.12		.12	
*64-66	.11½		.12		.12	
*66-68	.11½		.12		.12	
*68-70	.11½		.12		.12	

*At Sistersville, W. Va.

BURNING OIL

CHICAGO DIST. (Based on Group 3)—	July 22		July 15		July 8	
42-43 water white Kerosene	.04	.04¼	.04	.04¼	.04	.04¼
42-44 water white Kerosene	.04¼	.04½	.04¼	.04½	.04⅜	.04⅝
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04¼	.04½	.04¼	.04½	.04¼	.04½
42-44 water white Kerosene	.04½	.04¾	.04½	.04¾	.04½	.04¾
KANSAS—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04½	.04¼	.04½
ROCKY MOUNTAIN STATES—						
*40-42 water white Kerosene	.07¼		.07¼		.07¼	
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04	.04⅛	.04	.04¼	.04	.04¼
42-44 water white Kerosene	.04¼	.04⅜	.04⅜	.04½	.04¼	.04½
41-43 prime white Kerosene	.03⅞	.04	.03⅞	.04	.03⅞	.04
NORTH TEXAS—						
41-43 water white Kerosene	.03⅞	.04	.03¾	.04⅛	.03⅞	.04
41-43 prime white Kerosene	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾
40-42 prime white Kerosene	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾
42-44 water white Kerosene	.04⅛	.04⅜	.04¼	.04⅜	.04¼	.04⅜
ARKANSAS—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04¾	.04½	.04¾
42-44 water white Kerosene	.04¾	.05	.04¾	.05	.04¾	.05
PENNSYLVANIA—						
43 Kerosene prime white	.05⅞		.05⅞		.05⅞	
45 Kerosene water white	.06⅛		.06¼		.06¼	
46 Kerosene water white	.06½		.06½		.06½	
47 Kerosene water white	.07		.07		.07	
36 Miners' Neutral	.06¼		.06¼		.06¼	
34 Neutral	.06½		.06½		.06½	
34 Sundebloomed Neutral	.07½		.07½		.07½	
300 Mineral Seal	.07		.06½		.06½	
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 43-45 445 end point	.08½	.09	.08¼	.08¾	.08¼	.08¾
Engine distillate, 42-44 480 end point	.07½	.07¾	.07½	.07¾	.07½	.07¾

*Colorado points.

FUEL OILS

CHICAGO DIST. (Based on Group 3)—	July 22		July 15		July 8	
24-26 Fuel Oil (sellers' cars, Group 3)	.75	.80	.80	.85	.80	.85
22-24 (El Dorado)	.80	.85	.85	.90	.80	.85
18-20 (Smackover)	.80	.85	.85	.90	.75	.80
32-36 Gas Oil	.02¾	.02⅞	.02¾	.03	.02¾	.03
38-40 Straw distillate	.03⅛	.03⅜	.03¼	.03½	.03¼	.03½
KANSAS—						
24-26 Fuel Oil	.95	1.00	.95	1.00	.95	1.00
32-36 Gas Oil	.02⅞	.03⅛	.02⅞	.03⅛	.02⅞	.03⅛
38-40 Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
OKLAHOMA (Group 3)—						
22-26 Fuel Oil (sellers' cars)	.75	.80	.75	.80	.75	.80
24-26 Fuel Oil (buyers' cars)	.75	.80	.77½	.82½	.77½	.82½
24-26 Fuel Oil (sellers' cars)	.77½	.82½	.77½	.82½	.77½	.82½
28-30 Fuel Oil (sellers' cars)	.87½	.92½	.87½	.92½	.90	.95
32-36 Gas Oil	.02⅝	.02⅞	.02⅝	.02⅞	.02¾	.02⅞
38-40 Straw distillate	.03⅛	.03⅜	.03⅛	.03⅜	.03⅛	.03⅜
NORTH TEXAS—						
24-26 Fuel Oil	.80	.85	.80	.85	.80	.85
26-30 Fuel Oil	.85	.90	.85	.90	.90	.95
32-36 Gas Oil	.02⅝	.02⅞	.02⅝	.02⅞	.02¾	.02⅞
36-38 Gas Oil	.02⅞	.03	.02⅞	.03	.02⅞	.03
38-40 Straw distillate	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
NORTH LOUISIANA—						
20-22 Fuel Oil	.85	.90	.85	.90	.85	.90
32-36 Gas Oil	.02⅞	.03	.02⅞	.03	.02⅞	.03
36-40 light Straw distillate	.03	.03¼	.03	.03¼	.03	.03¼
ARKANSAS—						
38-40 Distillate	.03⅛	.03⅜	.03⅛	.03⅜	.03⅛	.03¼
32-36 Gas Oil	.03	.03¼	.03	.03¼	.03	.03¼
22-26 Refinery Fuel Oil	.80	.85	.80	.85	.80	.85
GULF COAST (South Texas)—						
Gas Oil	.04¼	.04¾	.04½	.05	.04½	.05
Fuel Oil	1.50	1.60	1.60	1.80	1.60	1.80
PENNSYLVANIA—						
30-34 Fuel Oil	.05		.05		.05	
36-40 Fuel Oil	.05¼		.05¼		.05¼	
CALIFORNIA—						
33-36 Distillate	.03¾	.04¼	.03¾	.04¼	.03¾	.04¼
27-33 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
15-20 Fuel Oil	1.40		1.40		1.40	

ROAD OILS

CHICAGO DIST. (Based on Group 3)—	July 22		July 15		July 8	
50-60 Asphaltic Content	1.00	1.05	1.05	1.10	1.10	1.15
60-70 Asphaltic Content	1.05	1.10	1.10	1.20	1.20	1.25
OKLAHOMA (Group 3)—						
40-50 Asphaltic Content	.95	1.00	.95	1.00	.95	1.00
50-60 Asphaltic Content	1.00	1.05	1.00	1.05	1.00	1.05
60-70 Asphaltic Content	1.05	1.10	1.05	1.10	1.05	1.10

NEUTRAL OILS

OKLAHOMA (Group 3)—						
Pale Neutrals:	July 22		July 15		July 8	
70-80 vis., 2½ color, 20-25 cold test	.04	.04½	.04	.04½	.04	.04½
100 vis., 2 color, 20-25 cold test	.05	.05½	.05	.05½	.05½	.06
100 vis., 3 color, 20-25 cold test	.04½	.05	.05½	.06	.05	.05½
150 vis., 3 color, 20-25 cold test	.08½	.09	.08½	.09	.10½	.11
150 vis., 4 color, 20-25 cold test	.08	.08½	.08	.08½	.10	.10½
180 vis., 4 color, 23-28 cold test	.09	.09½	.09	.09½	.11½	.12
180 vis., 3 color, 23-28 cold test	.09½	.10	.09½	.10	.12½	.13
200 vis., 3 color, 23-28 cold test	.11½	.12	.11½	.12	.13	.13½
200 vis., 4 color, 23-28 cold test	.11	.11½	.11	.11½	.12½	.13
220 vis., 3 color, 25-30 cold test	.12½	.13	.12½	.13	.14½	.15
220 vis., 4 color, 25-30 cold test	.11¾	.12¼	.11¾	.12¼	.14	.14½
240 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
240 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.15	.15½
280 vis., 3 color, 25-30 cold test	.16½	.17	.16½	.17	.18½	.19
280 vis., 4 color, 25-30 cold test	.15½	.16	.15½	.16	.17½	.18
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.08¼	.09	.08½	.09	.11¼	.12
180 vis., 6 color, 23-28 cold test	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
200 vis., 5 color, 23-28 cold test	.10½	.11	.10½	.11	.12	.12½
200 vis., 6 color, 23-28 cold test	.13	.13½	.13	.13½	.13	.13½
220 vis., 5 color, 25-30 cold test	.11	.11½	.11	.11½	.13¼	.13½
220 vis., 6 color, 25-30 cold test	.14¼	.14¾	.14¼	.14¾	.14¼	.14¾

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

240 vis., 5 color, 25-30 cold test	.13	.13½	.13	.13½	.14½	.15
240 vis., 6 color, 25-30 cold test	.15¼	.15¾	.15¼	.15¾	.15¼	.15¾
280 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.16½	.17
180-190 vis., S. R. green, 40-50 cold test	.07½	.08	.07½	.08	.08	.08½
190-200 dark green, 40-50 cold test	.06½	.07	.06½	.07	.07	.07½
170-190 dark green, 40-50 cold test	.06	.06¼	.06	.06¼	.06	.06½
600 E filtered	.20	.21	.20	.21	.20	.21
590-600 Bright Stock, 150-160 vis.	.28	.29	.28	.29	.28	.29
600-610 Bright Stock, 190-210 vis.	.32	.34	.32	.34	.32	.34
Waxes:						
124-126 White Crude Scale Wax	.03⅞	.04	.03¾	.03⅞	.03¾	.03⅞
PENNSYLVANIA—						
150, 3 color	.20		.20		.20	
180, 3 color	.22		.22		.22	
200, 3 color	.23¾		.23¾		.23¾	
220, 3 color	.26¾		.26¾		.26¾	
600, steam refined	.17		.17½		.18¼	
635, steam refined	.20½		.20½		.20½	
650, steam refined	.22½		.22½		.22½	
600, Pennsylvania flash	.25		.25½		.25½	
630, Pennsylvania flash	.32		.32½		.32½	
*550, E filtered	.19		.19½		.21	
*600, E filtered	.22½		.22½		.23	
600, E filtered	.21		.21½		.21½	
600, D filtered	.27		.28½		.28½	
550, E filtered	.20		.20		.20	
550, D filtered	.24		.24		.24	
Pennsylvania Bright Stock	.35		.35		.35¼	
†122-124 White Crude Scale Wax	.04½		.04½		.04½	
*122-124 White Crude Scale Wax	.04¼		.04¼		.04¼	

*At Warren, Penn. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.07	.08	.07½	.08½	.08	.09
No. 2 color, 100 vis., pale oil	.09½	.10½	.10	.11	.10½	.11½
No. 2 color, 150 vis., pale oil	.11½	.12½	.12	.13	.12½	.13½
No. 3 color, 200 vis., pale oil	.14	.15	.14½	.15½	.15	.16
No. 3 color, 300 vis., pale oil	.14½	.15½	.15	.16	.17	.18
No. 3½ color, 500 vis., pale oil	.18½	.19½	.18¾	.19¾	.19	.20
No. 3½ color, 750 vis., pale oil	.24	.25	.24¼	.25¼	.24½	.25½
No. 4½ color, 1200 vis., pale oil	.25½	.26½	.25¾	.26¾	.26	.27
No. 4½ color, 2000 vis., pale oil	.31½	.32½	.31¾	.32¾	.32	.33
No. 1½ color, 150 vis., pale, filtered	.21	.22	.21½	.22½	.22	.23
No. 2 color, 200 vis., pale, filtered	.23½	.24½	.23¾	.24¾	.24	.25
No. 3 color, 300 vis., pale, filtered	.26½	.27½	.26¾	.27¾	.27	.28
No 3½ color, 500 vis., pale, filtered	.31½	.32½	.31¾	.32¾	.32	.33
No. 3½ color, 750 vis., filtered	.39½	.40½	.39¾	.40¾	.40	.41
No. 5 to 6 color, 200 vis., red oil	.12	.13	.12½	.13½	.13	.14
No. 5 to 6 color, 300 vis., red oil	.14	.15	.14½	.15½	.15	.16
No 5 to 6 color, 500 vis., red oil	.16	.17	.16¼	.17¼	.16½	.17½
No. 5 to 6 color, 750 vis., red oil	.21	.22	.21½	.22½	.22	.23
CALIFORNIA—						
200 vis., 2½-3 color	.15	.17	.15	.17	.15	.17
200 vis., 3 -4 color	.16	.19	.16	.19	.16	.19
350 vis., 3½-4 color	.17½	.20	.17½	.20	.17½	.20
400 vis., 4 -4½ color	.19	.20	.19	.20	.19	.20
Red Neutrals:						
200 vis., 4½-5 color	.13	.14	.13	.14	.13	.14
300 vis., 5 -6 color	.14	.17	.14	.17	.14	.17
400 vis., 5 -6 color	.16	.18	.16	.18	.16	.18
500 vis., 6 -6½ color	.17	.18	.17	.18	.17	.18
600 vis, 6½ plus	.18	.21	.18	.21	.18	.21

NEW YORK DOMESTIC MARKET

	July 22	July 15	July 8
Motor Gasoline:			
Spot Gasoline, Bayonne	.13	.13	.14½
V. M. P. Naphtha, in steel barrels	.18	.19	.19
Lubricating Oil (Industrial) at refinery, Bayonne, N. J.:			
Cylinder, extra light filtered, in barrels	.45½	.45½	.45½
Cylinder, light filtered, in barrels	.39½	.39½	.39½
Cylinder, Bright Stock	.49½	.49½	.49½
Cylinder, steam refined (600)	.31½	.31½	.31½
Black, in bulk	.13	.13	.13
Bloomless, white, 30-31 gravity, 170 vis.	.45	.45	.45
Bloomless, 885 specific gravity	.17½	.17½	.17½
Red Paraffin:			
170 viscosity	.23	.23	.23
212 viscosity	.25	.25	.25
265 viscosity	.25½	.25½	.25½
295 viscosity	.30	.30	.30
Paraffin, 903 specific gravity	.31	.31	.31
*Fuel Oil:			
Bunker Oil, 14 plus	July 15, $1.75; 16, 1.75; 17, 1.75; 18, 1.75; 19, 1.75; 21, 1.75		
Diesel Oil, at refinery, gallon	.05¼	.05½	.05½
Furnace Oil, tank wagon, gallon	.10	.10	.10
Gas Oil, delivered in New York	.06¼	.06½	.06½
Wax, fully refined:			
120-122 a.m.p.	.05	.05	.05
125-127 a.m.p.	.05¼	.05¼	.05¼
130-132 a.m.p.	.07	.07	.07
135-137 a.m.p.	.08½	.08½	.08½

*Lighterage, 6.5c a barrel extra.

NEW YORK DOMESTIC PRICES

	July 22	July 15	July 8
Motor Gasoline, in cases, gallon	.28.15	.28.15	.28.15
Motor Gasoline, U. S. Navy, spec. gallon	.14	.14	.14
Naphtha, 60° F., 59-61 spec. grav.	.15.28	.15.28	.15.28
Naphtha, 60° F., 63-66 spec. grav.	.17	.17	.17
Naphtha, 60° F., 66-68 spec. grav.	.18.50	.18.50	.18.50
Kerosene:			
Standard white, in bulk, gallon	.06½	.06½	.06½
Standard white, in barrels, gallon	.13½	.13½	.13½
Standard white, in cases, gallon	.16.90	.16.90	.16.90
Water white, in cases, gallon	.07½	.07½	.07½
Water white, in barrels, gallon	.14½	.14½	.14½
Water white, in cases, gallon	.17.90	.17.90	.17.90

LOS ANGELES EXPORT PRICES

	July 22		July 15		July 8	
Kerosene:						
Water white	.04	.04½	.04	.04½	.04	.04½

CRUDE OIL PRICES

July 16.—The Texas Co. adopted the Sinclair Crude Oil Purchasing Co.'s four-price schedule for Oklahoma, North and Central Texas.

July 17.—Prairie Oil & Gas Co. adopted the Sinclair Crude Oil Purchasing Co.'s three-grade crude price schedule for Oklahoma, Kansas, North and Central Texas oils, making a reduction of 50 cents for oils 39 gravity and above and a reduction of 25 cents for oils 36 gravity and above. Prairie instituted new purchasing policy, paying cash for 50 per cent and agreeing to buy remainder within one year. Price schedule adopted by several other Mid-Continent purchasers. Indian Refining Co. and Paragon Development Co. reduced prices of three grades Western Kentucky crude 10 cents per barrel. Ohio Oil Co. reduced Lima, Indiana, Illinois, Princeton, Plymouth, Waterloo and Wooster crudes 10 cents. Imperial Oil Co., Ltd., reduced Petrolia and Oil Springs, Canada crudes 10 cents. Humble Oil & Refining Co. posted five-grade schedule for North Texas crudes, ranging from $1 to $1.75. The same company posted a price of $1.50 for Wichita and Archer County oils, the initial quotation by that company. Humble reduced Mexia and Powell crudes 25 cents and Currie crude 50 cents. The Texas Co. followed the same day.

(Additional price changes on Page 30)

Arkansas and North Louisiana	
Caddo, 38° and above	$1.35
35° to 37.9°	1.25
32° to 34.9°	1.15
Below 32°	1.00
Homer, 35° and above	1.35
33° to 34.9°	1.25
31° to 32.9°	1.15
Below 31°	1.00
Haynesville, 33° and above	1.25
Below 33°	1.15
El Dorado, 33° and above	1.35
Below 33°	1.25
Bull Bayou, 38° and above	1.30
35° to 37.9°	1.15
32° to 34.9°	1.00
Cotton Valley	.80
De Soto	1.35
Crichton	1.15
Bellevue	1.25
Smackover, 26° and above	.95
25° to 25.9°	.80
24° to 24.9°	.70
Below 24°	.60
*Stephens, Ark.:	
Below 23°	.85
23° to 25.9°	1.05
26° to 27.9°	1.20
28° to 31°	1.25
*Posted by Atlantic Oil Producing Co.	
Wyoming and Montana	
Rock Creek (Wyo.)	$1.45
Salt Creek	1.35
Big Muddy	1.25
Mule Creek	.85
Grass Creek (light)	1.70
Elk Basin	1.70
Lance Creek	1.65
Osage	1.65
Cat Creek (Mont)	1.70
Sunburst, (Mont.)	.98
Lost Soldier	1.03
Gerybull and Torchlight	1.65
Hamilton Dome	1.55
Lander based on contracts covering entire production of fields.	
Oklahoma, Kansas, North and Central Texas	
Prairie Oil & Gas Co. and other major purchasing companies, except as noted:	
Below 30°	$1.25
30° to 32.9°	1.45
33° and above	1.75
Magnolia Petroleum Co.:	
Below 28°	.90
28° to 30.9°	1.00
31° to 32.9°	1.10
33° to 35.9°	1.35
36° and above	1.50
Corsicana Light	1.50
Corsicana Teavy	.90
Mexia	1.50
Powell	1.75
Thrall	1.00
Humble Oil & Refining Co.	
Below 30°	$1.00
30° to 32.9°	1.20
33° to 35.9°	1.40
36° to 38.9°	1.60
39° and above	1.75
Wichita and Archer Counties	1.50
Corsicana Light	1.50
Mexia	1.50
Powell	1.50
Currie	1.50
Gulf Coast	
Grade "A"	$1.50
Grade "B"	1.30
Luling	1.00
Laredo	.75
Milam County	1.35
Rockdale-Minerva (Milam County)	1.00
Above 39° gravity	1.80
Calliham (Live Oak-McMullen)	1.68½
California	
14° to 14.9°	$1.00
20° to 20.9°	1.01
21° to 21.9°	1.02
22° to 22.9°	1.03
23° to 23.9°	1.05
24° to 24.9°	1.07
25° to 25.9°	1.10
26° to 26.9°	1.13
27° to 27.9°	1.16
28° to 28.9°	1.19
29° to 29.9°	1.22
30° to 30.9°	1.25
31° to 31.9°	1.28
32° to 32.9°	1.31
33° to 33.9°	1.34
34° to 34.9°	1.37
35° gravity and above	1.40
Eastern States	
Penna Grade Oil in New York Transit Lines	$3.25
Bradford District Oil in National Transit Lines	3.25
Penna Grade Oil in Southwest Pa. Pipe Line Lines	3.00
Penna Grade Oil in Eureka Pipe Line Lines	3.00
Penna Grade Oil in Buckeye Pipe Line Lines	3.00
Cabell Grade Oil in Eureka Pipe Line Lines	1.60
Corning Grade Oil in Buckeye Pipe Line Lines	1.90
Somerset Medium Oil in Cumberland Pipe Line Lines	1.70
Somerset Light Oil in Cumberland Pipe Line Lines	1.35
Ragland Grade Oil in Cumberland Pipe Line Lines	1.00
Lima	2.08
Wooster	1.90
Illinois	1.87
Indiana	1.88
Princeton	1.87
Plymouth	1.25
Waterloo	1.35
†Oil Springs, Canada	2.55
†Petrolia, Canada	2.48
*Western Kentucky, 36° and above	1.65
*Western Kentucky, 33° to 35.9°	1.55
*Western Kentucky, 32.9° and below	1.45
Cumberland and Monroe Counties, (Ky.), (Paragon Dev. Co.)	1.85

†Plus Government bounty of 52½c.

*Prices for Warren, Allen, Hancock, and Ohio Counties by Indiana Refining Co. Prices for Warren and Simpson Counties by Paragon Development Co.

Mexican Crude	
*Tuxpam (f.o.b. Mexican ports)	$1.40
†Panuco (f.o.b. Mexican ports)	1.15
Tuxpam (New York)	1.97
Panuco (New York)	1.57

*Plus 31.92c tax. †Plus 17.40c tax. Prices based on contracts.

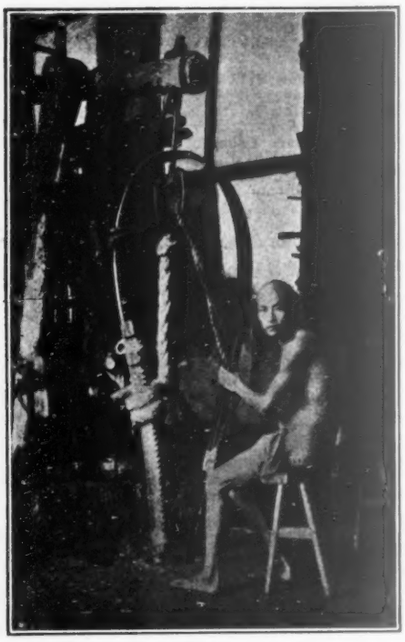
*40-42 water white Kerosene ..... .07¾ .07¾ .07¾

Drilled 2,000 Feet Before Drake's Time

Primitive Chinese Methods in Salt Wells Little Changed After 20 Centuries. Bamboo Derricks, Lines and Pipe Still Used

By W. H. Gallaher*

Lying at the foot of the lofty outliers of the Tibetan Plateau in southwestern China lies the great and fertile basin known as the "Red Basin" of Szechwan. Within this region, some 1,500 miles from the nearest seaport and 1,000 miles from the nearest railroad, live and prosper over 60,000,000 Chinese. Until less than a dozen years ago they were almost completely without communication with the outside world and even with the rest of China. A few wearisome trails led over steep mountains into the fertile basin; a few light junks were laboriously towed up through the great gorges of the Yangtze River; but there was no communication by road, railroad or river steamer. Even today the province has changed only by the introduction of river steamers running to one or two large towns.



A Chinese driller earning 22 cents a day and his keep

To the foreigner perhaps the most interesting industry in the "Red Basin" of Szechwan is that of producing and refining salt.

In spite of almost complete isolation, the Chinese of this province have gradually evolved practices in the salt industry, and most particularly in their methods of well-drilling and production, which are in many ways strikingly like those employed elsewhere in the world. On the other hand labor conditions and the comparative scarcity of good lumber and steel have caused the Chinese to develop some methods along lines entirely different from our own. The following article gives a brief account of the essential characteristics of present drilling and producing methods in the largest and most important producing area in Szechwan.

The salt in Szechwan is obtained from wells located in many places throughout the "Red Basin," but principally at a town not inappropriately named "Tzu-Liu-Ching," meaning "Wells-Flowing-By-Themselves." It is at this place that the industry has reached its highest development, and where the methods of drilling, of producing the salt water, of transportation, and of refining are most interesting. In many ways Tzu-Liu-Ching is the Chinese version of an American oil town!

Like Real Oil Town

At Tzu-Liu-Ching town-lot drilling, competition for leases, wildcatting, pipe line companies, refineries and export combinations are all well known. Even in their manner of living the residents of Tzu-Liu-Ching are not unlike those of American oil towns, for among the Chinese the citizens of Tzu-Liu-Ching are noted for being good spenders and high livers. Nowhere in China do the Mah-Jongg tiles rattle louder, nor the fiddles and drums make more noise. Perhaps since the Chinese well owner produces brine and not oil he loses that careworn expression due to worry over "edge" and "bottom" water.

Exactly where and when the first well near Tzu-Liu-Ching was drilled is shrouded in the mists of antiquity. Probably it was over 2,000 years ago. The first wells are undoubtedly shallow. But it is certain that more than 200 years ago deep wells had been sunk and that some were "flowing by themselves."

The world's first 1,000-foot well may not have been drilled near "Tzu-Liu-Ching." Nevertheless Tzu-Liu-Ching can claim, as an unchallenged record, the drilling of wells over 2,000 feet deep at least 200 years before Drake spudded in at Titusville.

Probably the first salt at Tzu-Liu-Ching was obtained from salt springs. These springs were undoubtedly located on or near the axis of the long unsymmetrical anticline upon which the city stands. At present the salt is obtained in the form of strong brines from wells located on the eroded crest and a short way down the flanks of the anticline. The field is some 15 miles in length and about 2 miles wide. The ground is hilly, with irregular drainage, although the maximum difference in elevation is not more than 300 feet. The wells are scattered irregularly, without regard to topography, over all parts of the anticline where producing sands can be reached within reasonable depths. In two or more locations the discovery of lenses of rock salt or exceptionally rich brines has caused intensive town-lot drilling.

Drill 4,000 Feet

As the first shallow wells at Tzu-Liu-Ching became exhausted they were deepened to tap lower producing sands. New brines, and later gas, were found and exhausted. Prospecting was carried still deeper until, stage by stage, the field has reached its present condition. Today most of the salt water comes from a producing sand lying 3,000 to 3,100 feet below the surface near the axis of the anticline, while the gas is found in horizons 200 to 800 feet deeper. The deepest well in the field at the present is 4,350 feet and is still drilling.

Coinciding with the gradual deepening of the wells came a gradual evolution in drilling methods. Though many of the tools and mechanical methods are still very primitive, the Chinese nevertheless show remarkable ingenuity in the adaptation of the material at hand, as well as in the application of many of the mechanical expedients which we have found most efficient in our own fields. That they are drilling 4,000-foot holes in about four years at a total cost of some $17,500 is not an unfair measure of their work.

Curious Derricks

The Chinese derrick is wholly different from the American or European rig. A drilling rig 50 to 70 feet high, consisting of two shear legs and two bracing legs, is first erected. The shear legs are about 34 feet apart, while the bracing legs are somewhat closer together, so that the ground plan of the rig is not square, but has the shape of the ace of diamonds. A heterogeneous collection of small, peeled pine and cedar poles, 8 to 10 inches in diameter, is the material of which the legs are composed. They are bound together every 2 feet with strong bamboo rope made taut with cedar wedges. They are often three feet in diameter at the base.

The two taller, or shear legs, on the long diagonal of the parallelogram, are about 4 feet apart at the top and carry the crown block. One of the bracing legs on the shorter diagonal reaches to a horizontal girth on the shear legs 10 feet below the crown pulley and the other bracing leg comes up to a second girth about 20 feet below the first. There are no true braces in any part of the Chinese rig and it seems as if their use is unknown to the Chinese builder. This rig is used in bailing while drilling is in progress.

After the well is completed and bailing of salt water is begun, the rig is usually heightened to a total of 120 to 160 feet by the erection of two high shear legs placed on the diagonals of the parallelogram outside the original legs and braced with six additional bracing legs. Each corner of the final rig is formed of three legs, one outside the other, with the outermost legs about 48 feet apart. When completed the whole affair looks more like a Chinese puzzle than a modern derrick.

Drilling Methods

The well is located about 1 foot off form letting the beam fly upward behind their backs to a cross check. Twenty to 40 strokes per minute are averaged day and night.

In drilling the line is attached to a promitive notched stick used as a substitute for the temper screw and the free end is doubled over and pushed down the hole to keep it out of the way. At the end of the trip pole is a swivel into which is tied a piece of soft rope which is given a half hitch around the temper screw. To let out screw the driller takes up slack and changes his hitch to a higher notch on the stick.

In pulling out the free end of the line is run over the spool and center so that the rope from the crown pulley will just clear the horizontal girths. Three feet away from the hole and 4 feet apart are two uprights which carry a trip pole. Outside of these supports are two legs which support a spool which is mounted some 20 feet above the well and whose diameter is just enough to allow a line from the bull wheel to pass over it and drop freely into the hole.

In drilling two platforms are built, one on each side of the trip beam. Three to five coolies step from one platform onto the beam, forcing it down and lifting the bit on the other end of the lever, and then step across to the other platform letting the beam fly upward behind their backs to a cross check. Twenty to 40 strokes per minute are averaged day and night.

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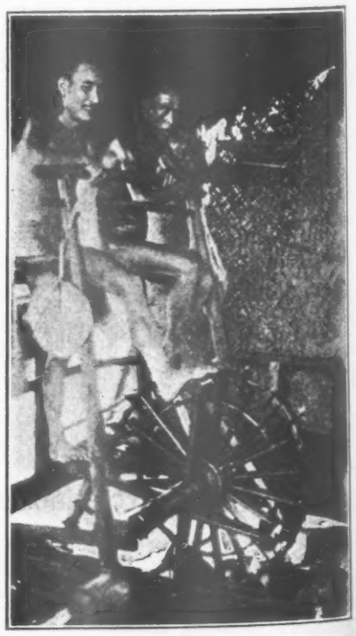
In drilling two platforms are built, one on each side of the trip beam. Three to five coolies step from one platform onto the beam, forcing it down and lifting the bit on the other end of the lever, and then step across to the other platform attached to the circumference of a bull wheel 15 to 25 feet in diameter, with a vertical axis, which is located in a hoisting shed about 100 feet away from the rig. Two to six water-buffaloes are hitched to the circumference of the wheel and as the animals walk slowly around the circular tread they wind up the line. It takes about 20 miutes to pull up 3,000 feet of line. When lowering the tools the wheel is controlled by a bamboo friction brake.

Bamboo Drilling Line

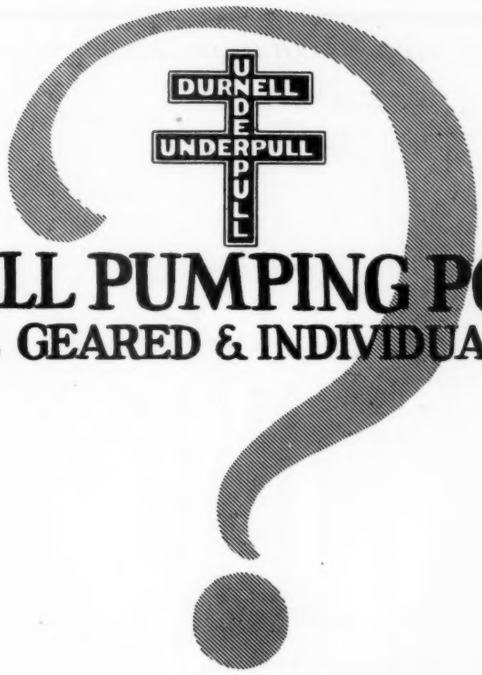
The drilling line is formed of pliable strips of bamboo, 40 feet in length, an inch and a half to two inches in width, and three-sixteenths of an inch in thickness. The strips are notched and bound together with strong hemp cord protected by a rawhide covering. One strip is used to depths of about 1,500 feet, two are used on the upper half of the line for depths between 1,500 and 2,500 feet and a third is attached to the upper part for greater depths. Bamboo rope, which is much used in the field for other purposes, is not used in drilling on account of its stretch. The Chinese driller is unable to use an elastic line and for this reason can not employ steel rope.

The native made bits and stems are crudely made in one piece weighing about 300 pounds. Sharpening is very poor in large bits on account of poor heating methods, but is often excellent in bits under 8 inches. The collar and stem are about 3½ inches in diameter with gently sloping shoulders. The blade is very short with shallow water courses and a cutting edge which is concaved or slightly cut out in the center. Another type of bit has a shank which is twisted around like a corkscrew through 360 degrees. The spiral edge of the shank is notched into cutting teeth which are thought to help in rounding out the hole on the up stroke of the drill. Two steel guides are often attached to the upper part of the stem. Several small transverse cleats are welded upon the guides

(Continued on Page 108)



A typical power plant installation and evaporating plant



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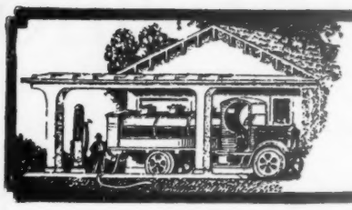


TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, July 22

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
†100 gals or more	15.25	...	19.0	12.0

Tank wagon prices on April 10, 1922, g. up 1½c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 29, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c.

Decatur, Ill.	17.2	...	19.2	12 5
East St. Louis	15.1	...	19.35	11.6
Joliet	17.4	...	19.4	12.7
Peoria	17.2	...	19.2	12.5
Quincy	16.2	...	18.2	12.3
Davenport, Ia.	15.5	...	20.5	12.9
Des Moines	16.0	...	18.5	12.9
Keokuk	16.5	...	18.5	12.9
Sioux City	15.0	...	18.0	12.5
Duluth, Minn.	18.2	...	20.2	13.6
Minneapolis	12.0	...	16.0	13.6
La Crosse, Wis.	18.2	...	20.2	13.4
Milwaukee	15.0	...	18.0	12.5
Madison	17.3	...	19.3	12.5
Detroit, Mich.	17.8	...	19.8	13.2
Grand Rapids	17.7	...	19.7	13.1
Saginaw	17.9	...	19.9	13.3
Evansville, Ind.	19.0	2.0	21.0	12.5
Fort Wayne	19.4	2.0	21.4	12.9
Indianapolis	19.2	2.0	21.2	12.7
South Bend	19.4	2.0	21.4	12.9
Fargo, N. D.	18.8	1.0	20.8	15.6
Huron, S. D.	21.0	2.0	23.0	14.1
Sioux Falls	18.0	2.0	20.0	13.6
*Kansas City, Mo.	12.9	1.0	20.9	11.3
Springfield	16,8	...	18.8	12.2
*St. Louis	15.6	0.5	18.9	12.0
*St. Joseph	16.0	0.5	18.0	11.9
Wichita, Kans.	15.3	...	19.8	11.8
Bartlesville, Okla.	17.4	2.5	20.4	10.9

*City tax.
†Tank wagon price on less than 100 gallons, 17c.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Newark, N. J.	17.5	...	....	13.0
Atlantic City	17.5	...	....	13.0
Annapolis, Md.	19.0	2.0	22.0	12.5
Baltimore	19.0	2.0	22.0	11.0
Cumberland	19.0	2.0	22.0	12.5
Washington, D. C.	19.0	2.0	21.0	12.5
Norfolk, Va.	20.5	3.0	22.5	13.5
Petersburg	20.5	3.0	22.5	13.5
Danville	20.5	3.0	22.5	13.5
Richmond	20.5	3.0	22.5	13.5
Roanoke	20.5	3.0	22.5	13.5
Keyser, W. Va.	19.0	2.0	....	13.5
Charleston	19.0	2.0	....	13.5
Parkersburg	19.0	2.0	....	13.5
Wheeling	19.0	2.0	....	13.5
Charlotte, N. C.	20.0	3.0	....	13.5
Hickory	20.0	3.0	....	13.5
Mt. Airy	20.0	3.0	....	13.5
Salisbury	20.0	3.0	....	13.5
Charleston, S. C.	20.5	3.0	....	14.0
Columbia	20.5	3.0	22.5	14.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Atlanta, Ga.	20.0	3.0	24.0	14.0
Augusta	22.0	3.0	24.0	14.5
Macon	22.0	3.0	24.0	15.5
Savannah	18.0	3.0	20.0	14.0
Birmingham, Ala.	20.0	2.0	22.0	15.5
Mobile	19.0	2.0	21.0	13.5
*Montgomery	21.0	3.0	23.0	16.5
Clarksdale, Miss.	19.0	3.0	22.0	14.0
Jackson	19.0	3.0	22.0	10.0
Natchez	18.5	3.0	21.5	13.5
Vicksburg	18.5	3.0	21.5	13.5
Jacksonville, Fla.	20.0	3.0	22.0	14.0
Miami	22.0	3.0	24.0	15.5
Pensacola	20.0	3.0	22.0	14.5
Tampa	20.0	3.0	22.0	14.0
Lexington, Ky.	21.0	3.0	23.0	15.0
Covington	20.0	3.0	22.0	15.0
Louisville	19.0	3.0	21.0	14.0

*In addition to State tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosene.

PACIFIC COAST DISTRICT

Stadard Oil Co. (California)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
San Francisco	17.0	2.0	20.0	15.5
Los Angeles	16.0	2.0	19.0	16.5
Fresno	17.5	2.0	20.5	17.5
Reno, Nev.	20.5	2.0	23.5	19.0
Portland, Ore.	19.0	3.0	22.0	16.5
Seattle, Wash.	18.0	2.0	21.0	16.5
Tacoma	18.0	2.0	21.0	16.5
Spokane	22.0	2.0	25.0	20.5
Phoenix, Ariz.	23.0	3.0	26.0	21.5

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Albany, N. Y.	17.0	...	21.5	14.0
*New York	19.0	...	22.0	14.0
Buffalo	16.5	...	18.5	14.0
Rochester	16.0	...	20.0	13.0
Syracuse	16.0	...	21.0	12.0
Boston, Mass.	17.0	...	20.0	14.0
Providence, R. I.	19.0	...	22.5	14.0
Augusta, Me.	19.0	1.0	21.5	14.0
Manchester, N. H.	19.0	2.0	22.5	14.0
Burlington, Vt.	19.0	1.0	21.5	14.0

*Price in steel barrels.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero Tank wagon
Denver, Colo.	19.0	2.0	21.0	13.5
Glenwood Spgs.	23.0	2.0	....	17.5
Pueblo	19.0	2.0	21.0	14.5
Billings, Mont.	21.5	2.0	23.5	14.5
Butte	23.0	2.0	25.0	15.0
Great Falls	23.0	2.0	25.0	16.0
Helena	23.0	2.0	25.0	16.0
Miles City	22.5	2.0	24.5	15.5
Boise, Idaho	24.5	2.0	26.5	20.0
Salt Lake, Utah	24.0	2.5	26.0	17.5
Ogden	24.0	2.5	26.0	17.5
Basin, Wyo.	20.0	1.0	....	14.0
Casper	18.0	1.0	20.0	12.0
Cheyenne	19.5	1.0	21.5	13.5
Cody	21.0	1.0	....	15.0
Lander	20.0	1.0	....	14.0
Albuquerque, N M	21.0	1.0	23.0	16.5

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
*Pittsburgh, Pa.	18.0	...	23.0	14.0
*Philadelphia	18.0	...	23.0	14.0
*Scranton	18.0	...	23.0	14.0
*Allentown	18.0	...	23.0	14.0
*Altoona	18.0	...	23.0	14.0
Dover, Del.	20.0	2.0	23.0	14.0
Wilmington	20.0	2.0	23.0	14.0
Providence, R. I.	20.0	...	23.0	14.0
Springfield, Mass	20.0	...	23.0	14.0
Worcester	20.0	...	23.0	14.0
Boston	20.0	...	23.0	14.0
Hartford, Conn.	21.0	...	24.0	14.0
New Haven	21.0	1.0	24.0	14.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Omaha	13.0	...	15.0	12.5
Crawford	18.0	...	....	13.25
McCook	16.75	...	18.75	14.0
Norfolk	16.75	...	18.75	13.0
North Platte	16.0	...	18.0	13.75
Scotts Bluff	18.25	...	20.25	13.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
All Ohio Points	17.0	...	19.0	14.0

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Dallas, Tex.	14.0	1.0	18.0	10.0
Fort Worth	14.0	1.0	17.0	11.0
Houston	16.0	1.0	19.0	12.0
San Antonio	14.0	1.0	17.0	10.0
El Paso	12.0	1.0	14.0	12.0
Muskogee, Okla.	16.0	2.5	21.0	11.0
Oklahoma City	15.5	2.5	20.5	11.0
Tulsa	13.0	2.5	18.0	11.0
Ft. Smith, Ark.	17.0	4.0	20.0	12.0
Little Rock	20.0	4.0	23.0	13.0
Texarkana	19.0	4.0	22.0	12.0

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
New Orleans, La.	14.5	1.0	17.5	9.0
Alexandria	15.5	1.0	19.5	13.0
Baton Rouge	15.0	1.0	18.0	11.5
Lake Charles	16.5	1.0	19.5	13.0
Shreveport	16.5	1.0	19.5	13.0
Memphis, Tenn.	16.0	2.0	18.0	14.0
Chattanooga	18.5	2.0	20.5	14.5
Knoxville	19.5	2.0	21.5	15.0
Nashville	18.5	2.0	20.5	13.5
Bristol	20.0	2.0	22.0	13.5
Little Rock, Ark.	20.0	4.0	22.0	13.0

TANK WAGON CHANGES

July 10.—Standard Oil Co. (Kentucky) reduced gasoline tank wagon and service station prices 2 cents at Savannah, Ga.

July 11.—Standard Oil Co. (Kentucky) reduced gasoline tank wagon and service station prices 1 cent at Covington, Ky.

July 15.—Continental Oil Co. reduced gasoline tank wagon and service station prices at Albuquerque, N. M., 1 cent. Standard Oil Co. (Louisiana) reduced gasoline tank wagon and service station prices 1 cent throughout its territory, except at New Orleans and Memphis where no changes were made. Magnolia Petroleum Co. reduced gasoline tank wagon and service station prices 4 cents at El Paso and 2 cents at Little Rock.

July 16.—Magnolia Petroleum Co. reduced gasoline tank wagon price 1 cent at Fort Smith.

July 17.—Standard Oil Co. (Kentucky) reduced gasoline tank wagon 1 cent in Mississippi to take care of a 3-cent differential.

July 18.—Standard Oil Co. (Nebraska) reduced gasoline tank wagon and service station prices 1 cent, except where recent reductions had been made. Standard Oil Co. (Indiana) reduced gasoline tank wagon and service station prices 1 cent throughout territory where reductions had not been made since February 5, 1924. Standard Oil Co. (Indiana) reduced gasoline tank wagon and service station prices 1.1 cents at Milwaukee. Magnolia Petroleum Co. reduced gasoline tank wagon and service station prices 3 cents at Tulsa.

July 19.—Standard Oil Co. (New Jersey) reduced gasoline tank wagon and service station prices 1 cent in New Jersey, Maryland, District of Columbia, West Virginia and North Carolina and ½-cent in Virginia and South Carolina.

July 21.—Atlantic Refining Co. reduced gasoline tank wagon and service station prices 1 cent in Pennsylvania and Delaware.

July 23.—The Standard Oil Co. (Ohio) reduced gasoline tank wagon and service station prices 2 cents in its entire territory. Kerosene was reduced 1 cent.

PENNSYLVANIA REFINED MARKET IS IMPROVING

OIL CITY, Pa., July 21.—The market for refined products in Northwestern Pennsylvana has been holding up remarkably well when the reductions in crude oils and tank wagon quotations are taken into consideration.

During the past week there was a further weakening of neutrals and cylinder stocks. On the other hand, there was an improvement in gasoline, kerosene, fuel oil and wax, as far as movement and demand were concerned. The price of the latter list also held extremely firm.

There is a big movement of gasoline at the present time and the price is holding up. Kerosene is much better than it was a week ago, with better prices and greater demand. There is still some kerosene offered at low prices, but it is very scarce.

Neutrals are the worst of the list and their position is the poorest that it has been in months. Cylinder stocks are also in a bad condition.

CRUDE PRICE CHANGES

(Continued from Page 27)

July 18.—Ohio Oil Co. and Midwest Refining Co. reduced Wyoming and Montana crudes 25 cents with the exception of Sunburst, Mont., crude which was reduced 7 cents. Humble Oil & Refining Co. reduced Grade A Gulf Coast crude 25 cents and Grade B 15 cents, The Texas Co. and others following the same date.

July 19.—Standard Oil Co. of Louisiana reduced various grades Arkansas and North Louisiana crudes 25 cents except Smackover and Cotton Valley which were reduced 10 cents. Other purchasers followed same date. Atlantic Refining Co. reduced various grades of Stephens crude 15 cents.

MID-CONTINENT REFINERY OPERATIONS FOR WEEK ENDING JULY 12

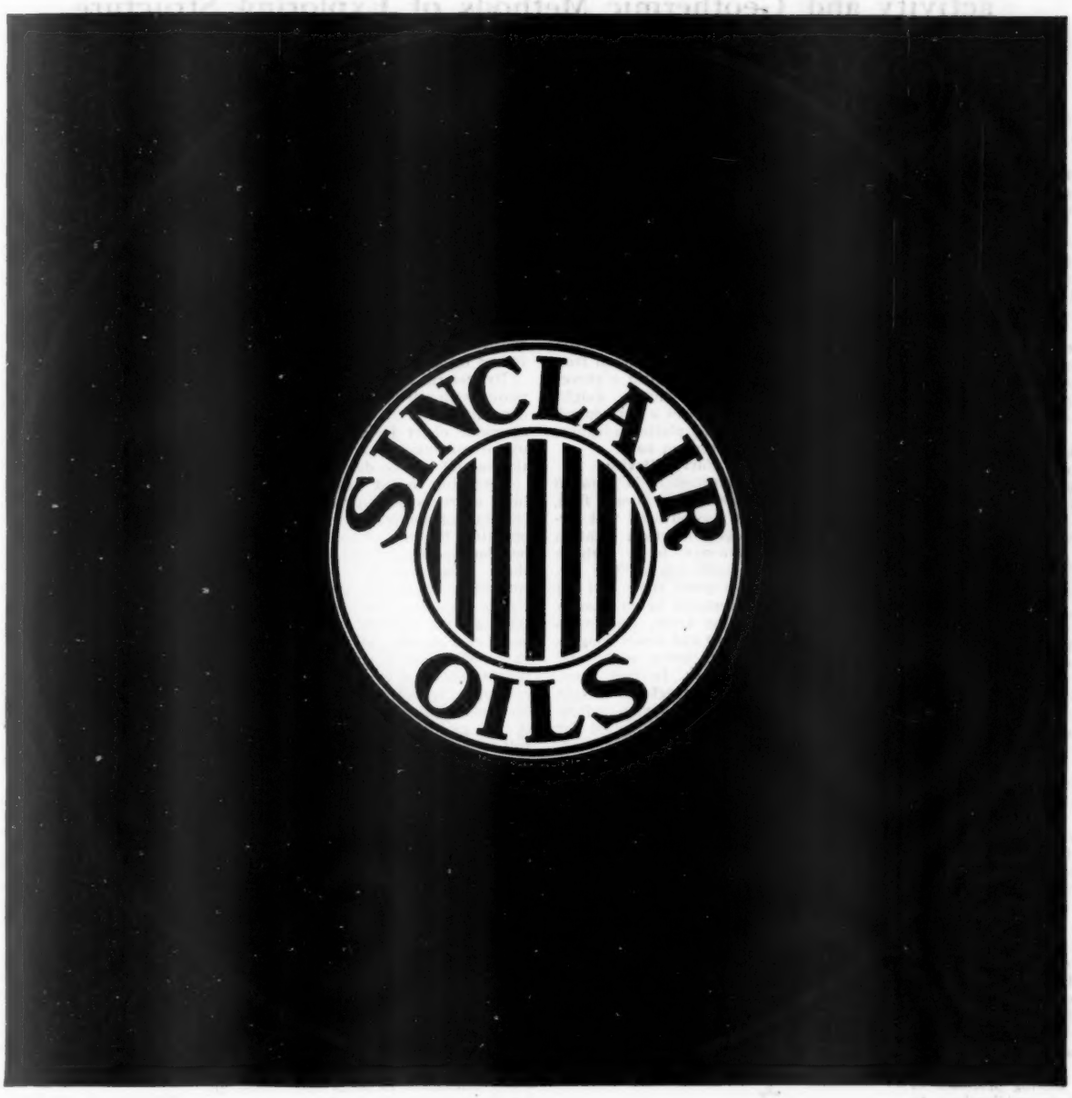
Mid-Continent refiners again made an appreciable hole in the stocks of gasoline during the week ending July 12, when the 141 reporting refineries showed a decrease of 3,867,362 gallons or 2.88 per cent in gasoline stocks, making a total of 130,234,002 gallons, according to the regular weekly report of the Western Petroleum Refiners Association. Shipments of gasoline increased 10.27 per cent during the week and the output increased only 874,306 gallons or 3.12 per cent. Kerosene stocks increased 173,685 gallons or 0.82 per cent during the week, while shipments increased 21.68 per cent. The output increased 572,912 gallons or 9.57 per cent. Gas and fuel oil stocks increased 1.36 per cent and the output decreased 8.43 per cent. The 141 reporting refineries increased their runs 11,577 barrels or 0.62 per cent during the week to a total of 1,868,697 barrels.

CONSOLIDATED STATEMENT COVERING ALL MID-CONTINENT REFINERIES FOR WEEK ENDING 7 A. M., JULY 12, 1924

	Kansas	Oklahoma	North and Central Texas	North Louisiana and Arkansas	Mid-Continent Total	July 5, '24	May 17, '24	Apr. 19, '24
Number of refineries reporting	27	62	42	10	141	141	138	*141
Daily still capacity, bbls.	102,600	265,700	105,550	25,000	498,850	498,850	481,850	537,400
Combined operations during week:								
Materials to stills, bbls:								
Crude, item A	349,227	336,641	356,184	88,807	1,630,859	1,651,655	1,521,131	1,946,67
Other oils (see note), item B	40,516	137,247	45,595	14,480	237,838	205,465	156,763	297,45
Total	389,743	973,888	401,779	103,287	1,868,697	1,857,120	1,677,894	2,233,22
Output, gallons:								
Gasoline, item C	6,271,583	15,581,551	6,102,706	974,730	28,930,570	28,056,264	24,142,816	28,327,55
Kerosene, item D	1,923,082	3,128,780	1,192,389	318,052	6,562,333	5,989,421	5,066,475	6,313,16
Gas and fuel oil, item E	7,054,441	15,303,727	7,459,870	2,014,899	31,832,937	34,759,193	29,312,741	36,364,00
Stocks on hand at close of week:								
Materials for stills, bbls.:								
Crude, item J	569,026	4,174,260	1,176,257	818,826	6,738,369	6,796,836	7,261,423	7,744,51
Other oils (see note), item K	68,777	1,269,676	203,722	511,191	2,053,366	2,161,020	1,983,702	2,422,51
Finished products, gallons:								
Gasoline, item L	15,163,121	98,451,457	15,524456	1,094,968	130,234,002	134,101,364	145,127,101	192,004,80
Kerosene, item M	4,259,756	11,940,880	4,927,575	135,422	21,263,633	21,089,948	15,959,257	23,316,75
Gas and fuel oil, item N	11,303,851	73,881,006	13,974179	3,471,913	102,630,949	104,023,010	94,834,544	130,636,36

*Including six Gulf Coast refineries.

Note—Other oils includes all oils other than crude which are either purchased or withdrawn from stocks and run to stills during the week. The total of items A and B is, therefore, the net quantity of materials consumed by the reporting refineries in producing the quantities of products shown as the result of the operations of the refiners during the week. Item K includes all stocks of oils other than crude, held for further re½ning.



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SINCLAIR OILS

Searching Interior of Earth's Crust

Use of the Torsional Balance, the Electric, Magnetic, Radioactivity and Geothermic Methods of Exploring Structure

By Alfred Gradenwitz*
Berlin-Friedenau, Germany

A new scientific doctrine has been developed in the course of the last few years which could be termed "applied geophysics." This uses some methods of its own for an investigation of the practical problems of mining, civil, and hydraulic engineering by studying the distribution of physical phenomena connected with remote effects, the very structure and composition of the subsoil. While availing itself in many cases of the results of practical geology as a basis and starting point, it has an incomparably wider scope, comprising as it does not only the phenomena immediately accessible to the eye but manifestations of any physical property, thus allowing even rocks covered by enormous strata to be investigated without the necessity of expensive drilling work.

Three Groups of Phenomena

Of the physical phenomena exhibited by materials composing the earth's crust the following three groups should primarily be taken into account:

First, phenomena connected with an immediate remote effect, comprising gravity, magnetism, electromotive forces, and, to a certain extent, radioactive effects.

Second, phenomena exerting an influence on the distribution of an energy flux introduced into the ground and which can be ascertained by gauging this flux. This class comprises electric currents, electric and elastic waves, and the like.

Third, phenomena which, though connected with no remote effect proper, will by their distribution along the surface of the earth as well as along boreholes, pits, and galleries, supply useful information as to the nature of surrounding strata. This class comprises the distribution of radioactive substances and radiations, chemical and optical properties of rock samples, the distribution of temperature, and the like.

These methods have been studied comprehensively at the Institute of Applied Geophysics, of Goettingen, Germany, where a staff of physicists, geologists, geophysicists, mineralogists, and mining and other special engineers, in conjunction with scientific mechanics, is permanently engaged in solving problems of exact science and their applications to engineering. Its research work is directed to the following methods:

1. The flux method (observation of the behavior of electric currents in the ground).
2. Electric wave method.
3. The magnetic method.
4. The radioactivity method.
5. The geothermic method.

Determinations With Torsional Balance

The determination of gravity, if carried out at a considerable number of points within a given distance, will supply useful data with regard to the distribution of masses in the upper strata of the earth's crust. While gravity of course generally decreases uniformly from the poles to the equator as well as with increasing altitude, experience shows that the presence of very dense masses immediately below the point of observation will increase gravity and the presence of light masses reduce it. Surfaces of equal gravity accordingly show concave portions above especially dense masses (eruptive rocks and the like), and convex portions above especially light masses, such as salt and lignite.

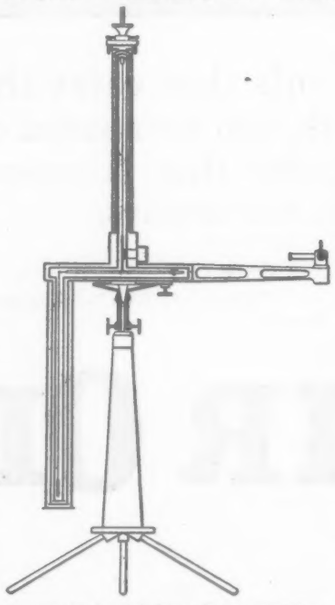
Gravity readings are taken with a pendulum. The three-pendulum apparatus devised by Sterneck comprises three pendulums oscillating at right angles to one another, the oscillations of which are checked up by means of the astronomically controlled pendulum of a clock. This highly sensitive apparatus has been used especially in ascertaining any abnormal behavior of gravity within an extensive district. However, in the case of salt strata, or the like, of limited dimensions, an even more sensitive instrument should be used, and excellent results have in such cases been obtained with the torsional balance originally designed by Eotvos. This, as shown, comprises a horizontal beam suspended from a very thin platinum-iridium thread from one of whose ends is suspended a thread about 70 cm. long carrying a weight, while the other end carries a corresponding counterweight. The platinum-iridium thread is fixed to a torsion head.

Operation of Eotvos Device

As long as this attachment is installed in a perfectly uniform gravitational field, any rotation of the torsion head will correspond to an exactly identical rotation of the beam. However, in a variable gravitational field, rotation of the torsion head through a given angle will not by any means correspond to an exactly equal rotation of the beam, the forces attacking at the upper and lower weights respectively no longer being equal and parallel to one another. In fact, these forces are bound to exert a certain amount of twist on the platinum-iridium thread, which must be compensated for by a corresponding twist of the thread. These small additional amounts of twist are ascertained by fixing a mirror to the beam of the system (which is free to rotate round a vertical axis), after which the shifting position of the reflection of a lamp (taking part in the rotation) on a sensitive plate fixed to the case is noted. Departures from the normal gravity figures are inferred from deflections of the luminous mark from the zero of the apparatus.

Direction of Magnetic Forces

Another method successfully employed in the tests under discussion is that of magnetic measurements. The presence of large amounts of highly magnetizable rocks increases the magnetic forces at the point of observation, and the existence of rocks refractory to magnetism results in a reduction of magnetic forces. Salt strata are instances of the latter alternative; the presence of iron ores is detected by an excess of magnetism. The same process has been found valuable in oil prospecting. Any departure from normal figures in the case of horizontal intensities is ascertained by a magnetic needle free to rotate round a horizontal or vertical axis, while vertical intensity readings are preferably taken with some sort of transportable Lloyd balance, and the direction of magnetic forces is ascertained by means of magnetic theodolites.



Eotvos torsional balance for ascertaining gravity.

By determining the behavior of magnetic declination at a number of points extending over a considerable area, a magnetic chart is prepared from which useful conclusions as to the structure of the subsoil can be derived.

According to yet another method, telluric currents set up in the ground by certain substances are gaged by the operator. Because of their chemical composition and its alteration by weathering, these substances in their special surroundings constitute galvanic elements. Pyrite deposits, for example, when in contact with surface water and with atmospheric oxygen, will exert intense galvanic effects on their surroundings, and thus establish a certain voltage and, accordingly, telluric currents. This is ascertained by inserting between two points of the ground a conductor including a volt-meter in the circuit. When thus gauging the difference of potential at a considerable number of points with regard to a given point of reference, the masses responsible for these phenomena can be located and their shapes determined.

Radioactivity of Elements

Another phenomenon connected with remote effects is the radioactivity of some elements, such as uranium, thorium, and a number of other even much rarer substances. Though this method is primarily used in connection with rocks coming close to the surface, its practical importance is increased by the decomposition of radioactive matter and the corresponding greater penetration of these effects. The investigation of radioactive sediments in wells also comes under the same heading. These radiations, of course, are measured by ascertaining the ionization of an inclosed amount of air radiated on by a sample.

The geothermic method is based on variations of underground temperature with variable depth. Recent results of drilling operations have disproved the alleged constancy of the rise in temperature with a given increase of depth, the magnitude of this rise being greatly dependent on local conditions and accordingly allowing valuable conclusions to be made as to the composition of strata still to be traversed in drilling ground.

Elective Conductivity

Another factor which, according to local conditions, is subject to a considerable variation is the electric conductivity of rocks, which depends mainly on the variable moisture of the ground. Moreover, certain minerals, primarily ores with metallic luster, such as iron and copper pyrites, zinc blende, and so on, will exhibit a conductivity practically like that of metallic substances, over considerable distances. A special apparatus is used to set up an electric field of force artificially, and the distribution of current densities and tensions is ascertained throughout the district being investigated. In the case of inrushes of water into potash and other mines, the origin of water can thus be ascertained with sufficient accuracy to allow the ways of access to be cut off effectually.

Another interesting method is that of electric waves, which is primarily employed in potash mines. Inasmuch as electric waves in a non-conductive medium are transmitted uniformly in all directions until they are stopped, reflected, or refracted by conductive masses, transmitting and receiving apparatus of the same construction as radio apparatus is simply installed at two points of a mine, when the greater or lesser ease of communication will supply valuable data as to the presence of lyes. In deserts and other rainless regions the reflection of electric waves has been used successfully for ascertaining the presence and depth of ground-water levels.

Making Artificial Earthquakes

However, even the transmission of elastic waves through the ground is to a high degree dependent on the composition and structure of the soil, and its investigation accordingly often leads to valuable results. Such waves are of course primarily set up by natural earthquakes, but artificial shocks produced mechanically by the detonation of explosive charges can as well be resorted to. Highly sensitive gauges designed on the seismograph principle are used as receivers, enabling the moment of arrival and the amplitude and direction of incoming waves to be recorded accurately. The speed of transmission of such waves is the factor most subject to variation, according to local conditions, and which therefore is preferably used as base and starting point for investigations.

Which of these methods should be adopted in a given case of course depends on its special conditions. The best practice will generally consist of using concurrently several methods assisting and supplementing one another.

*In Engineering & Mining Journal Press.

PROHIBITION OF CRUDE EXPORTS

Exportation of crude oil from Poland was prohibited shortly after the Armistice, when the remaining supplies were reduced by the resumption of refining. Prison terms and heavy fines have now been provided to check the occasional evasions of restrictions which have occurred. All exports of crude oil, save on previous Governmental compensation agreements which are no longer important, are prohibited until such time as domestic stocks shall reach six months' production, or 600,000 tons. Stocks at the close of March were 62,750 tons. Unless there occurs a larger increase of production than can now be foreseen, the above limit will probably prove prohibitive of exports for many years.

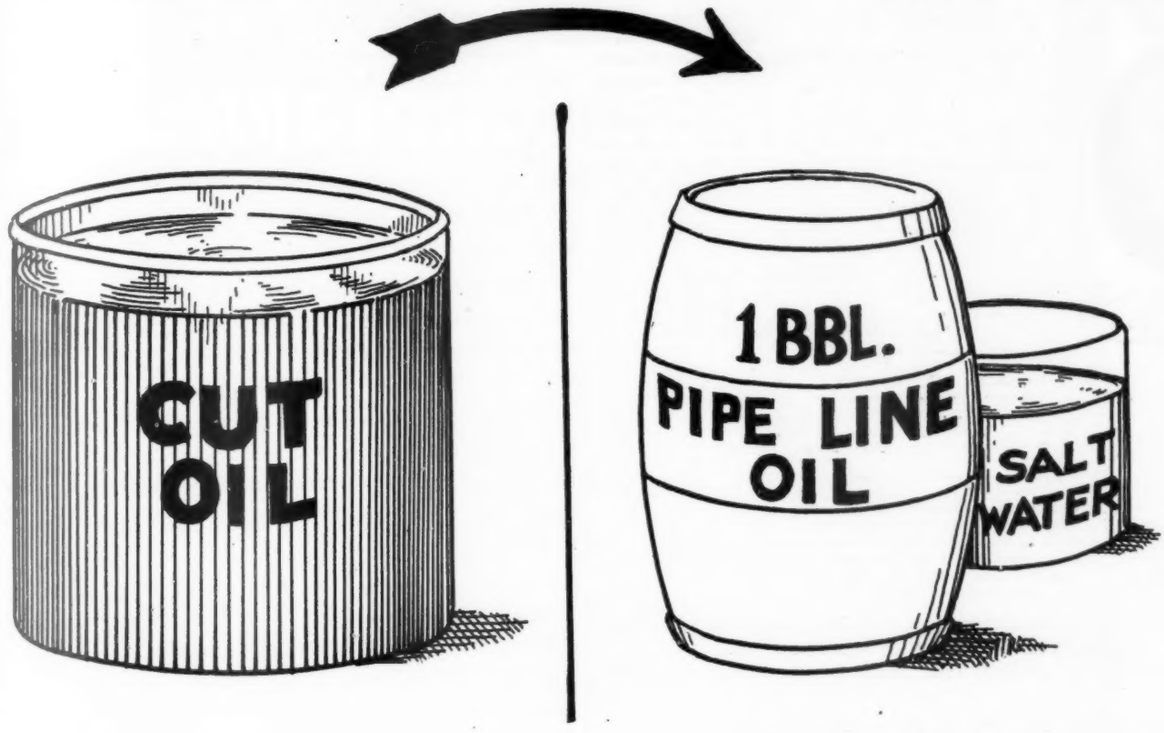
TUBE OFFICE FOR HOUSTON

The Monongahela Tube Co. of Pittsburgh, Pa., announces the opening of a district sales office at Houston, Tex., under the direction of Craig Geddis. Mr. Geddis will have charge of the sales of the company's oil country tubular goods and boiler tubes in the States of Texas, Louisiana and Arkansas.

BOOKLET ON FURNACE ARCHES

The M. A. Hofft Co. has just had issued a new booklet, describing in detail National furnace arches. The booklet points out the lower maintenance costs, outstanding advantages, ease of installing and replacements, as well as other exclusive features of the National arches.

From This To This



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Fresh cut oil is completely separated into pipe line oil and water, by the TRET-O-LITE Process. Cost rarely exceeds a few cents per barrel of recovered oil, regardless of the character of the emulsion treated.

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PUNISHING THE OIL INDUSTRY

Attorney General Barrett of Missouri "has issued a second warning to producers and refiners of gasoline in that State that gasoline prices must be lowered at once or prosecutions will follow."

"The natural laws of supply and demand," he says, "are being interfered with. The State cannot fix the price but I can proceed to punish the companies which are preventing natural economic laws from bringing gasoline prices down. If the Standard Oil Company and other companies are stubborn and refuse to bring prices to a just and fair level I can promise them adequate punishment."

Mr. Barrett bases his threat upon the statement that "current gasoline prices not only discriminate against Missouri but show amazing discriminations within the State against particular localities."

And it is for this situation for which great oil companies are in no way responsible and are most anxious to avoid that he promises to punish them.

His fundamental error is in assuming that the discrimination must be upward, that the bargain prices of distress gasoline must be right. He has simply got his natural economic laws upside down and does not know it.

Mr. Barrett says the law of supply and demand is being interfered with. But there is no shortage of supply. In fact the industry has been so superefficient in production that it is suffering from a surplus of 1,600,000,000 gallons of gasoline and of 420,000,000 barrels of crude and unfinished oils.

Is Mr. Barrett going to punish it for that?

How then has the law of supply and demand been interfered with? By these variations in prices? Who is responsible for them and what causes them?

If Mr. Barrett will go into that he will learn a great deal about the natural economic laws of production and trade that he seems to have overlooked.

One of the basic economic laws in any successful business that can keep going is that its products cannot be sold below the cost of production.

This immense and staggering overproduction of oil and gasoline cost just so much to produce. It cannot be sold below that without a loss to the producers. Everybody admits that but the legal talent attacking the oil business.

The great bulk of the oil business is trying to sell its production at a price that will repay the cost to produce and a reasonable profit. There is no crime in that. Every other business is doing it or there would not be any business.

That is why gasoline prices are higher in some places than others. Now as to why they are lower elsewhere. Some producers and refiners find themselves with larger stocks than they are financially able to carry. It happens in every business, so why not in oil?

When it happens the business man has to sell his surplus for what he can get in order to obtain money to continue in business. He cuts the price. But when his surplus is gone his competitors who have been able to carry their stocks can and do go back to prices that their products are worth judging by the cost of production.

This is what has been happening in the gasoline business and is the explanation of the "discrimination" charged by the Attorney General of Missouri.

The "discrimination" springs from the necessities of a few who have to sell at cost or below cost to get cash to keep going. It would be as logical for the Attorney General to threaten punishment to the shoe, clothing or grocery merchants who fail to meet the bargain prices of the bankrupt on the next corner.

One shipment of distress gasoline may start a gasoline war in one town while the absence of distress gasoline in another may enable the stations there to sell at a normal price. But that is not a discrimination to be charged to the industry. Neither is it a violation of the law of supply and demand.

There is not enough distress gasoline to bring down the price below cost in every city and State in the country. If there was the industry and the consumers of gasoline would be in a very bad way indeed since it would mean the ruin of the oil business and the certainty that when the joy ride on below-cost gasoline was over the public would have to come back to much higher prices.

The supply will keep up so long as the demand justifies a price making it worth while to furnish the supply. When the price does not make it worth while the supply will cease. Bargain sales and distress products are incidental or accidental in any business and have no lasting effect on the normal course of production and supply.

The assumption of the Attorney General of Missouri that sacrifice prices are normal and anything above must be extortion would not get a hearing directed against any business but the oil industry. It only shows how badly warped popular opinion may become when political prejudice is applied to a plain business operation.

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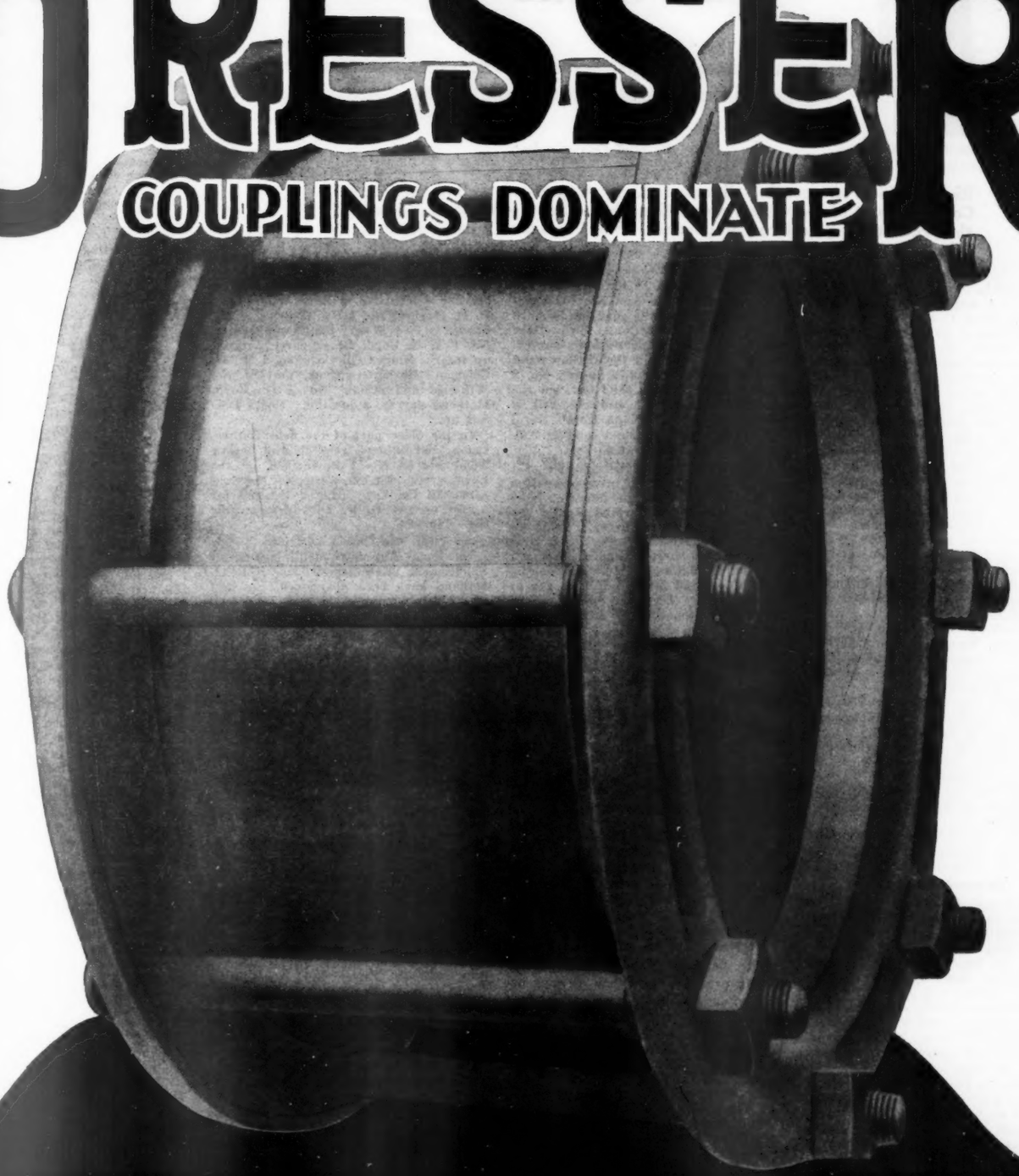

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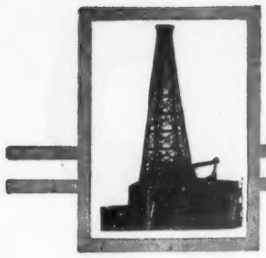

East Central Texas

By Staff Correspondent

Richland Field is exceeding all expectations. A 3,200-bbl. well of the Sun Oil Co. is the best of the week's completions, but other big producers have sent the production up to large proportions. Small leases will necessitate much offsetting.

CORSICANA, Tex., July 21.—The Richland Field, southwest of the Powell Field, in Navarro County, is exceeding the expectations of its most enthusiastic operators. Wells of large production which have been brought in lately have caused the production of the field to mount rapidly and a survey made of the seven days ending on Wednesday, July 16, credited the field with an average of 15,157 bbls. a day.

The Sun Oil Co.'s No. 7 Brown, which started off at 1,250 bbls. from sand at 2,922-2,956 feet was drilled 1 foot deeper and its production increased to 3,200 bbls. a day. This is the largest producer thus far drilled in the field.

The Boyd Oil Co.'s No. 6 Webb, White survey, made a 900-bbl. well in sand at 2,928-68 feet.

The Oxford Oil Co.'s No. 1 Davis, Coate survey, got sand at 2,914-65 feet and started at 1,000 bbls.

The Hallmarck Oil Co.'s No. 5 Webb, White survey, found sand at 2,930-73 feet and it is good for 450 bbls. The same company's No. 6 Webb is a 450-bbl. well at 2,940-74 feet.

The Simms Oil Co. has a 750 bbl. well in No. 1 Allison, John White survey, from sand at 2,936-77 feet.

The Atlantic Oil Producing Co.'s No. 1 B. L. Swink, Choate survey, is an 800 bbl. well at 2,926-68 feet.

The Boyd Oil Co.'s No. 5 Webb, White survey, started at 425 bbls. from sand at 2,917-63 feet.

Tucker & Fox' No. 1 Davis, John White survey, swabbed 1,200 bbls. a day from sand at 2,930-52 feet.

Richland District

The Richland district is all that is holding up the production of the East Central Texas area. It has been as high as 17,000 bbls. a day recently, and may go above the peak production estimate of 20,000 bbls. placed upon it earlier in the month. The field is made up largely of 40-acre leases which will necessitate a lot of offsetting and the number of wells to be drilled even in the part of the territory now regarded as reasonably sure, will be large.

J. K. Hughes Development Co.'s No. 4 West, Lopegre survey, is a derrick. Oxford Oil Co.'s No. 2-A and 4-A R. R. Davis, Coate survey, timbers in and a location for No. 3-A. Rowan and others' No. 2 Davis, John Coate survey, timbers in. There are 39 operations started in the field, including derricks up and wells drilling and timbers on the ground.

In Rains County, the test of Yost and others on the Tallet farm, Tallett survey, was abandoned as a failure at 3,450 feet.

In Navarro County

The Boyd Oil Co.'s No. 1 McGowan, Webb survey, which tested salt water at 3,413 feet was plugging back to test on oil sand at 3,245½ to 3,247½ feet. This test was drilled near the same company's good gas well, which had been drilled with the expectation of opening a pool on the Bazette structure. The gas production warranted the drilling of another expensive test which was done on the McGowan farm.

In the Powell Field the Kirby Petroleum Co.'s No. 5 McKie, on the Buffington survey got the top of the sand at 2,920 feet and was drilled to 2,926 feet. The well started off on the pump at 110 bbls. The Tidal Oil Co.'s No. 7-C Ramsey, Smith survey, was good for 90 bbls. a day initial production. Birdwell & Gray's No. 1 Harvard, Mathews survey, made a 35-bbl. well in the shallow sand at 875-907 feet. Davis & Spear's No. 2 Boyd, another shallow sand test, got the pay at 978-1,023 feet and the well is good for 45 bbls. Garland Kent's No. 3 Boyd, Smith survey, found sand at 985-1,003 feet and started at 45 bbls.

The shallow sand is the objective of a considerable number of new operations in the field, including the following most recently reported: Garland Kent's No. 2 J. F. Allen, Smith survey, rigging up rotary; Birdwell & Gray's No. 2 Harvard, Mathews survey, rigging up rotary; Brandon & McCamey's No. 1 Woolens, show of oil and 500,000 feet of gas at 956-1,007 feet; Davis & Speer's No. 3 Boyd, Mathews survey, drilling below 700 feet; same firm's No. 4 G. Boyd, a location; J. K. Hughes Development Co.'s No. 1 Boyd, Smith survey, drilling below 600 feet; No. 2 Boyd, a location; D. F. Hughes' No. 1 K. Woolens, Smith survey, a derrick up; Smith and others' No. 1 T. E. Boyd, Bragg survey, rigged up rotary; Simms Oil Co.'s No. 1 W. D. Coleman, Mathews survey, derrick up; Williams and others' No. 1 G. Boyd, Mathews survey, a location; No. 2 Derrick up.

In the older part of the field Witherspoon and others were drilling below 2,650 feet on No. 1 Springfield, on the Love survey. On the west side, the Simmons Oil Co. have made a location for a test on the B. F. Dill farm on the Smith survey.

In the Currie District

The long shut down drilling wells of Snowden & McSweeney, No. 7 Longbotham, have been abandoned, the first at 3,270 feet and the latter at 3,209 feet. and the Humphreys Oil Co.'s No. 8 Bounds has been abandoned at 3,065 feet.

Fields of the Central West

By Whit

FINDLAY, Ohio, July 21.—The cut in the price of crude has already shown its effect in the fields of the Central West, more particularly in Indiana, Illinois and Kentucky, but not so noticeable in the Lima and Central Ohio fields. In the Central Ohio Field the large gas concerns are moving along with development work as usual, but the past week did not bring as many locations staked as earlier in the year.

An even dozen completions were made in the old Lima Field. The Paulding County area around Payne attracts attention, as does the Cynthian Township, Shelby County Field, on account of the second well of the Eilerman Oil Co., on the Eilerman farm, reported with a flush of 100 bbls., and in the McGuffey Field, in Marion Township, Hardin County, where Schmidt & Holmes completed a 20-bbls. flush well, in Section 14, near the town of McGuffey.

In Freedom Township, Wood County, the Ohio Oil Co. drilled in a 20-bbl pumper in No. 21 A. H. Bruning, Section 27. Top of sand was reached at 1,190 feet and drilled 103 feet in to a total depth of 1,293 feet. The Van Vleck-Stowe Oil Co.'s No. 6 F. G. and W. Ables, Section 36, pumped 5 bbls., with top of sand at 1,212 feet and the oil at 60 feet in. In Liberty Township, Mrs. C. Potter's No. 20 on her own farm, Section 21, proved a dry hole. This lease has been one of Wood County's good ones and producing for many years.

In Lake Township, Wood County, Charles F. Zeising and others' No. 3 Fred Overmyer, Section 35, pumped 25 bbls. from a depth of 1,316 feet. In Perrysburg Township, Melvern Good's test 500 feet from the south line and 600 feet from the east line has not been put on the pump, but with 25 feet of sand, is estimated good for 5 bbls., and adds some new territory for further development. In Troy Township, same county, between Woodville and Toledo, Johnson & Johnson's No. 11 on the Herman Linke farm, Section 13, is reported good for 2 bbls. at 1,257 feet. This lease was formerly owned by the Troy Oil & Gas Co.

One of the likely looking spots in the Trenton Rock Field, is around the town of Coldwater, in Butler Township, Mercer County, a spot overlooked in the earlier days of activity. The Carter Oil Co. is reported to have what looks like a 1,000,000-foot gasser at its test on the Catherine Fetzer farm, Section 19. The George Lacknett well in Section 31, which is on a lease where there are six gas wells, is reported showing for a 20-bbl. flush producer, which means an oil pool as well as gas. In Hopwell Township, same county, the June Oil Co.'s No. 4 on the southwest corner of the George F. Hillsworth, Section 28, is a 5-bbl. pumper, while E. A. Kuhns and others' No. 1 C. Ricketts, Section 1, is showing for 2 bbls.

In Allen Township, Darke County, the Real Oil Co.'s test on the northwest corner of the D. Dundlesperger, Section 32, is a dry hole, and shut off hopes of extending the field farther in that direction.

Central Ohio

But few completions were recorded from the Central Ohio fields during the week and those were rather light gas wells, or small oil producers. In the north end, in Cannan Township, Wayne County, George Gertenslager and others' No. 3 T. Fike, Section 28, is reported at 5 bbls. Arthur & Mills drilled in a fair gas well at a test on the F. A. and M. Small, Section 29, and the Creston Gas Co. also found a fair gas well at a second test on the J. M. Wiles, Section 22. The Logan Gas Co. started the drill at No. 1 I. N. Hawks, Section 22, and the Ohio Fuel Gas Co. is drilling a second well on the William S. Smith, 94 acres, Section 21. The Logan Gas Co. has made a location for a test on the E. Ely 126 acres, Section 25.

In Monroe Township, Holmes County, the East Ohio Gas Co. brought in an average gas well at a test on the James Allison, Section 9. The Central Ohio Gas Co. is drilling a test on the John Schwier, Section 7.

In Wooster Township, Wayne County, the Ohio Oil Co. is cleaning out No. 3 Peter Shelley, Section 21; No. 1 James Snyder, Section 15, and No. 1 Frank Miller, known as the Deitrick farm, Section 21, as well as nearing the pay sand in No. 1 Charles Haupert, Section 31. In Cannan Township, Bert Harder and others are cleaning out No. 3 G. Reader, Section 15, with prospects of a fair producer. Arthur & Milles are due in the sand with No. 2 A. W. Latimer, Section 29, Cannan Township, and Baker Brothers are getting ready to start drilling at No. 2 Whitmore, Section 9, same township.

In Brown Township, Knox County, the East Ohio Gas Co. drilled a fair gas well in No. 3 Ray Koppert, Section 7, and due in with No. 13 John Sniveley 90 acres, Section 34. In Jefferson Township, this company has a light gas well in No. 3 J. M. Lower, Section 14. In Clay Township, Bell Brothers are drilling No. 1 Walter Grief, Section 17.

In Hanover Township, Ashland County, the Logan Gas Co. has a light gas well after a shot in No. 1 on the Perry Black farm, Section 17.

In Liverpool Township, Medina County, the Ohio Fuel Gas Co. abandoned its No. 1 location on the Charles Stark, Section 23, as well as No. 5 on the George Acker, Section 3, York Township, same county. The Logan Gas Co. made a location for a test on the Jane Smith 139 acres, Section 29, Westfield Township, same county. Central Ohio Gas Co. is drilling No. 1 E. G. Kuhn, Section 8, Guilford Township.

In Benton Township, Hocking County, the Logan Gas Co.'s second test on the C. H. Rathbone, Section 29, is a dry hole.

In Washington Township, Jackson County, the Ohio Fuel Gas Co. abandoned No. 1 location on the C. W. Patterson 40 acres, Section 24. The Ohio Fuel Supply Co. is drilling No. 1 Fred Pugh, Section 32, Coal Township, same county.

In Carthage Township, Athens County, the Logan Gas Co. is rigged up but is delayed awaiting a natural gas connection for fuel at its test on the J. W. Kincade farm, Section 9.

Indiana Field

But one new completion was reported from the Indiana Field during the week and that is in the Princeton district, in Center Township, Gibson County, Edmons and others' test on the W. Steiner, Section 24. Top of the sand was found at 1,437 feet and drilled in to a total depth of 1,444 feet, making 15 bbls.

In Monroe Township, Pike County, F. T. Ward's No. 3 on the Amelia Skinner, Section 22, has been abandoned on account of water.

Illinois Field

Two completions were made in the Illinois fields for the week. The Wabash County Field failed to show any new completions. In Montgomery Township, Crawford County, Charles Karns' No. 2 on the northeast corner of the J. Laughead, Section 3, is reported a dry hole at 1,060 feet.

In Centralia Township, Marion County, the Petro Oil & Gas Co.'s No. 13 on the John Kinsey, Section 13, is reported at 10 bbls. flush at 790 feet, and estimated will drop off to a small pumper, as the second 24 hours showed but 4 bbls.

Kentucky Field

No new work to speak of is being started in the eastern Kentucky fields. The Union Gas & Oil Co. is not making any additional work not required which is true of the other large operating concerns, the price of crude being at a point where expensive drilling is prohibited. In the North or South Weir sand fields of Lawrence-Johnson-Magoffin counties, it is expensive to move material, as the fields are far from rail transportation and it means mile after mile of trucking to move the supplies over the hills

(Continued on Page 100)

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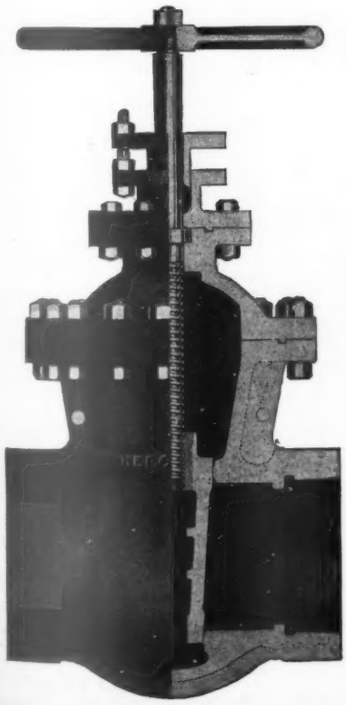

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KEROTEST

Oklahoma Field Operations

By C. D. Lockwood

Magnolia's well in 25-8-7 looks like opening of another prolific area west of Wewoka, or large extension of present field; new Dutcher sand well in 18-15-12 looks good in top of sand; Stroud Field extended quarter mile eastward by 60-bbl. an hour well; declines offset gains in new production.

The opening of another prolific area to the west of the Wewoka Field in Seminole County loomed as a brighter prospect than ever before as a result of one of the past week's developments, and a new Dutcher sand pool was apparently uncovered about 2 miles north of Beggs, in Okmulgee County. These two discoveries and the coincident finding of 106 feet of sand in the northernmost producer in the Cromwell Field, and salt water in the southernmost extremity of that field, were about the only interesting events reported from the Oklahoma Fields which seem to grow increasingly more quiet.

There is plenty of room between the Louis Sykes & Boggs Drilling Co.'s No. 1 Willed, NE cor. SE NE, Section 31-8-8, which extended the Wewoka Field westward about two weeks ago with 800 bbls. production ,and the new find of the Magnolia Petroleum Co. in its No. 1 Rosanna, SW cor. SE SE, Section 25-8-7, which topped the sand at 3,030 feet and created a lot of excitement by making an 80-bbl. flow with total depth at 3,045 feet. It was good for 420 bbls. in 24 hours at that depth and when drilled to 3,056 feet, increased to 500 bbls. daily. This well offsets to the east the Dixie Oil Co.'s No. 1 Rosanna, which also created considerable excitement a few weeks ago but which turned out to be a 60-bbl. well. Scouts expect a new area to be found between the Sykes and Magnolia wells, possibly as prolife as in the original Wewoka Field. The Sykes well was deepened 5 feet to 3,183 feet in sand topped at 3,171 feet, increasing to 1,000 bbls. immediately afterward, but falling back somewhat the second 24 hours.

New Dutcher Sand Pool?

The Dutcher sand pool was opened by L. J. Farris and others in their No. 1 Bright, NE cor. SE NE, Section 18-15-12. It topped the sand at 2,205 feet and with the bit about 1 foot in the sand, was making 8,000,000 feet of gas and spraying about 25 bbls. of oil. There were 57 feet of open hole and about 40 feet of cable in the hole, and the opinion of reliable production men was that the well looked good, although no estimate of its possible production could be made. It was being cleaned out. The Carter Oil Co. bought an 80 north of it and a 40 on the east. The well was being cleaned out Monday. There is lots of room around it for a nice pool.

In the Cromwell Field, Roxana Petroleum Corp.'s No. 2 Brown, C SW SW SW, Section 10-10-8, averaged almost 140 bbls. an hour for the first 24 hours, making a total of 3,330 bbls. in that period from sand at 3,407-3,512 feet. Pay sand was topped at 3,472 feet, which made 40 feet of pay sand and 105 feet of sand body, including the gas sand which yielded 50,000,000 feet of gas. Monday's production was 3,003 bbls. The same company's No. 1 Brown, a location east, topped the sand at 3,421 feet and at 3,460 feet was making 45,000,000 feet of gas.

Holm & Jarvis found salt water at 3,498-3,505 feet in their No. 3 L. Harjo, SE cor. NW SW, Section 22-10-8, and shut the well down. There was a small show of oil along with salt water at 3,481 feet, and the owners were considering swabbing it.

In the Thomas area, northwest of the Tonkawa Field, two offsets to the Marland Refining Co.'s discovery well found showings. The same company's No. 1 School Land, SE cor. Section 16-25-2w, west offset, had 1,000,000 feet of gas in sand at 2,159 feet, and the Twin State Oil Co.'s No. 1 Siler, NW cor. Section 22-25-2w, south offset, had a show of oil and gas at 2,057 feet.

The Stroud Pool was extended a quarter of a mile eastward into Creek County by the Roxana Petroleum Corp.'s No. 2 Hood, NW cor. SE NW, Section 7-14-7. This well was drilled to 4,144 feet, 22 feet in sand topped at 4,122 feet, and was flowing 60 bbls. an hour. The same company's No. 2 Brace, NW cor. NE SW, Section 12-14-6, Lincoln County side, topped the sand at 1,146 feet and made two small flows at 4,153 feet.

As usual, three of the principal fields gained in daily average production while three others declined, the net gain amounting to less than 200 bbls. daily. Cromwell, Papoose, and Tonkawa were those that increased, while Stroud, Wewoka and Burbank lost. The figures for the week ended July 16 were as follows: Cromwell Field, 40,284 bbls. from 46 wells, a gain of 2,134 bbls. and 9 producers; Stroud Field, 18,290 bbls. from 25 wells, a loss of 1,251 bbls. and gain of 1 well; Papoose Pool, 8,644 bbls. from 27 wells, an increase of 1,203 bbls. and 4 producers; Wewoka Field, 7,579 bbls. from 66 wells, a loss of 716 bbls. and 1 well.

The number of wells drilling in the State showed a sharp decline for the week ended July 12 when there were only 892 as compared with 942 for the previous week. The rigs and locations remained about the same with 203 and 68 respectively, while the shut down wells and the completions both declined in number. There were 284 wells shut down as compared with 298 for the week before, and 89 completions as compared with 118 previously. The total number of operations was 1,536, a loss of 95.

Burbank Production

Daily average production in the Burbank Field for the week ended July 16 was as follows, by companies:

Company—	Wells.	Bbls.
Carter Oil Co.	184	7,432
Comar Oil Co.	7	222
Cosden Oil & Gas Co.	102	5,421
Devonian Oil Co.	16	232
Gardner Petroleum Co.	20	556
Gypsy Oil Co.	196	8,412
Kewanee Oil & Gas Co.	21	753
Laurel Oil & Gas Co.	16	283
Lorraine Petroleum Co.	15	209
Midland Oil Co.	37	4,194
Mid-Kansas Oil & Gas Co.	38	2,301
Peters & Oliphant	1	133
Phillips Petroleum Co.	64	9,615
Phillips Petroleum Co. and Delmar Oil Co.	16	3,186
Phillips Petroleum Co. and Skelly Oil Co.	168	6,937
Prairie Oil & Gas Co.	106	4,813
Producers & Refiners Corp.	29	576
Roxana Petroleum Corp.	57	934
Simons, Moore et al.	29	432
Sinclair Oil & Gas Co.	145	5,143
Skelly Oil Co.	20	1,366
Tidal-Osage Oil Co.	43	860
Twin State Oil Co.	24	2,220
Total, Burbank proper	1,354	66,230
Total last week	1,342	67,292
Difference	12	1,062
Kay County extension—		
George S. Bole	3	530
Carter Oil Co.	11	1,585
Comar Oil Co.	19	1,034
Cosden Oil & Gas Co.	16	2,057
Gypsy Oil Co.	18	2,040
Laurel Oil & Gas Co.	2	354
Phillips Petroleum Co.	30	4,681
Mid-Kansas Oil & Gas Co.	10	1,585
Prairie Oil & Gas Co.	4	554
Pure Oil Co.	5	77
Roxana Petroleum Corp.	8	593
Dye, Tomlinson et al	8	900
Skelly Oil Co. and Phillips Petroleum Co.	18	630
Sinclair Oil & Gas Co.	5	558
The Texas Co.	16	928
Twin State Oil Co.	14	1,114
Total extension	187	19,220
Total last week	186	20,160
Difference	1	940
Total Burbank	1,541	85,450
Total last week	1,528	87,452
Difference	13	2,002

Daily average pipe line runs from the Burbank Field during the week follow: Gulf Pipe Line Co., 11,547 bbls.; Cosden Pipe Line Co., 9,562 bbls.; Kay County Gas Co., 7,471 bbls.; Osage Pipe Line Co., 1,177 bbls.; Oklahoma Pipe Line Co., 17,497 bbls.; Prairie Pipe Line Co., 13,139 bbls.; Sinclair Pipe Line Co., 5,701 bbls.; Moore Refining Co., 3,245 bbls.; Standish Pipe Line Co., 7,214 bbls.; Empire Pipe Line Co., 2,158 bbls.; Mid-Kansas Oil & Gas Co., 3,886 bbls.; Magnolia Pipe Line Co., none; Twin State Oil Co., 1,114 bbls.; Ozark Pipe Line Co., 1,789 bbls.

Total storage in the Burbank Field on July 16 was estimated at 12,083,907 bbls.

Production in Tonkawa

Following is the daily average production of companies in the Tonkawa Field, for the week ended July 16:

Company—	Wells.	Bbls.
Amerada Petroleum Corp.	35	1,689
Blackwell Oil & Gas Co.	30	1,244
Carter Oil Co.	6	199
Champlin Refining Co.	2	13
Champlin Refining Co. and Tmin State Oil Co.	1	23
Comar Oil Co.	316	15,461
Cosden Oil & Gas Co. and Marland Refining Co.	16	429
Gypsy Oil Co.	97	3,774
Healdton Oil & Gas Co.	27	1,417
McCaskey & Wentz	42	2,492
McMan Oil & Gas Co.	3	19
Pennok Oil Co.	27	4,186
Phillips Petroleum Co.	4	167
Prairie Oil & Gas Co.	12	498
Sinclair Oil & Gas Co.	1	19
Slick-Comar Oil Co.	31	4,357
Southwestern Petroleum Co.	15	664
Texas Co.	5	65
White Eagle Oil & Refining Co.	7	293
Total	677	37,009
Total last week	676	36,243
Difference	1	766

The daily average pipe line runs from the field were as follows: Kay County Gas Co., 12,057 bbls.; Ozark Pipe Line Co., 7,574 bbls.; Gulf Pipe Line Co. 3,044 bbls.; Champlin Refining Co., 7,313 bbls.; Bolene Refining Co., 1,310 bbls.; Globe Refining Co., 1,000 bbls.; Producers & Refiners Corp., 498 bbls.; Enid Oil & Pipe Line Co., 405 bbls.; Oklahoma Pipe Line Co., 199 bbls.; Empire Pipe Line Co., 730 bbls.; Golden Rule Refining Co., 185 bbls.; Prairie Pipe Line Co., 1,342 bbls.

The Champlin Refining Co. was running 1,342 bbls. to storage for the Pennok Oil Co. and the Globe Refining Co. was running 1,500 bbls. daily from the storage tanks of the Moore Refining Co. The three deep sand wells in the Tonkawa Field together averaged 7,009 bbls. daily during the week.

Cromwell Production

The Cromwell Pool's daily average production for the week ended July 16 was as follows:

Company and lease—	Wells.	Bbls.
Amerada Pet. Corp., Bruner	2	3,235
Burke-Greis Oil Co., Brown	1	2,421
Carter Oil Co., Roberts	1	1,479
Carter Oil Co., P. Bruner	2	700
Cosden Oil & Gas Co., W. King	1	450
Cosden Oil & Gas Co., J. Willis	3	158
Berry Pet. Co., Yarhola	1	970
Gilliland Oil Co., Proctor	2	2,301
Gypsy Oil Co., C. Bruner	2	1,304
Gypsy Oil Co., P. Stidham	3	4,104
Gypsy Oil Co., Z. Stidham	3	3,240
Gypsy Oil Co., J. Willis	1	197
T. B. Hoffer et al., S. Proctor	2	2,673
Holmes & Jarvis, F. Harjo	1	71
Holmes & Jarvis, L. Harjo	2	491
Ind. O. & G. Co., L. Harjo	1	277
McMan Oil & Gas Co., King	4	3,840
Mid-Kansas Oil & Gas Co., Alexander	3	1,851
Shaffer Oil & Ref. Co., Yarhola	2	1,440
Superior Oil Corp., L. Baker	1	1,202
Tidal Oil Co., Harjo	5	3,813
H. F. Wilcox Oil & Gas Co. P. Bruner	4	8,727
Total	46	49,220
Total last week	37	33,139
Difference	9	5,130

Daily average pipe line runs and runs to storage were as follows: Cosden Pipe Line Co., 10,786 bbls.; Gulf Pipe Line Co., 10,412 bbls.; Magnolia Pipe Line Co., 5,970 bbls.; Oklahoma Pipe Line Co., 3,566 bbls.; Prairie Pipe Line Co., 8,063 bbls.; Producers & Refiners Corp., 1,842 bbls.; Sinclair Pipe Line Co., 9,521 bbls.; to storage, 5,543 bbls.; to loading rack, 804 bbls. Total, 56,507 bbls.

In Burbank Field

In the Burbank Field, the Prairie Oil & Gas Co.'s No. 8, CNL NE NW SW, Section 13-27-5, topped the sand at 2,944, found first oil at 2,960 feet and at total depth of 3,008 feet was good for 100 bbls. natural. The Midland Oil Co.'s No. 10, C SW NE SE, same section, had 1,200 feet of oil in the hole from sand topped at 2,935 feet, with oil at 2,937-92 feet. The same company's No. 7, C NW SE NW, Section 14-27-5, was good for 181 bbls. natural from sand at 3,046-78 feet and made 177 bbls. after a shot of 80 quarts. The same company's No. 16, NE cor. NW, same section, made 112 bbls. natural from sand at 2,996-3,013 feet and 136 bbls. after a 50-quart shot. The Cosden Oil & Gas Co.'s No. 9, CNL NW NE SE, same section, was a 100-bbl. natural well from oil sand at 3,010-54 feet, with top at 3,000 feet.

The Skelly Oil Co.'s No. 1, NE cor. NW SW, Section 9-27-5, in the extension was fishing tools and wire line with total depth at 2,945 feet in sand. It flowed 30 bbls. the first 12 hours, 70 bbls. the second 24 hours and 60 bbls. the third day. The same company's No. 3, in the NW of Section 35-27-5, Osage County, was good for 75 bbls. after a 50-quart shot in sand at 2,892-2,964 feet; No. 4, in the same quarter, made 50 bbls. after a 60-quart shot in sand at 2,891-2,977 feet.

The Carter Oil Co.'s deep test in the NW cor of Section 9-26-6, ran into red granite at 4,241 feet and was abandoned. It topped the lime at 2,835 feet.

In northern Pawnee County, the Turman Oil Co. had a rig up for No. 1 Smith, SW cor. NW, Section 26-23-5.

In the southern part of the county, the Carter Oil Co.'s No. 4, NW cor. NE NE, Section 17-20-6, was drilling at 3,040 feet in sand topped at 3,025 feet and showing for 40 bbls. The Westerly oil Co. was drilling at 2,900 feet in its No. 2 Smith, NW cor. SW, Section 22-20-6, an old well.

In Creek County, T. E. Mann and others abandoned No. 1 Vincent, NE cor. SW, Section 2-19-8, as dry at 3,022 feet. The Cortez Oil Co. also plugged its old well, No. 4 McGilbra, NW cor. SW NW, Section 2-18-7, as a duster at 3,992 feet.

The Savoy Oil Co. shot No. 2 Johnson, NE cor. NW NE, Section 23-17-8, with 80 quarts in oil sand at 2,276-2,310 feet and it made 50 bbls. afterward. The Atlantic Oil Producing Co.'s old well, No. 1 Fixico, SW cor. SE SE, Section 29-16-8, was good for 20 bbls. natural from oil sand at 3,770-84 feet. The Wolfe Oil Corp. had a rig on the ground for its No. 1 Harvey, SE cor. SW NE, Section 33-16-8.

In the southeastern corner of Okfuskee County, the Carter Oil Co. was spudding No. 1, C SE SE NE, Section 35-10-12.

Vern and Bruner

In the Vern Pool, Tulsa County, F. B. Jackson spudded and shut down his No.

1 Childers, CWL NW NE, Section 4-19-12. The Echo Oil Co.'s No. 2 Grayson, C NE SW NE, Section 5-19-12, made 100 bbls. natural from sand at 2,091-2,101 feet.

In the Bruner Pool, the Sand Springs Home was spudding No. 6 Bruner, CSL SE SW, Section 6-19-12. The same company skidded the rig on No. 5 E. Bruner, NE cor. SE SW, Section 6-19-12, 70 feet southwest, and was drilling at 350 feet. Its No. 5 Berryhill, CNL NE NE NW, Section 7-19-12, was good for 30 bbls. natural from oil sand at 2,141-55 feet. No. 3 Berryhill, CNL NW NE, same section, was also good for 30 bbls. natural from sand at 2,042-51 feet.

The depth of a Lincoln County failure drilled by Flynn & Morgan in the SE cor. Section 2-14-5, was erroneously reported last week as 3,474 feet. It should have been 4,474 feet. This well was completed in a 6-inch hole and is believed by some to be a record depth for that six bore in this State. At least, no data concerning a deeper 6-inch hole was available.

In southern Osage County, the Pioneer Petroleum Co.'s No. 2, CEL SE NW, Section 5-20-11, found the Bartlesville sand at 1,698-1,710 feet and made 35 bbls. after a 40-quart shot. The Sand Springs Home was drilling at 550 feet in its No. 4, CSL SE, Section 21-20-11, and W. D. Gray was spudding his No. 4, C NW NE, Section 28-20-11.

The Mutual Oil Co. had a 200-bbl. well in its No. 8, SE cor. NW NW, Section 28-20-12, Country Club Pool. It reached the Mississippi Lime at 1,634 feet and uncovered the pay at 2,031-45 feet.

Pettit Pool

In the Pettit Pool, near Hominy, the Marland Refining Co. was drilling at 425 feet in No. 11-A, SE cor. NE SE, Section 20-23-8. The Indian Territory Illuminating Oil Co. was setting 6-inch casing at 720 feet in No. 324, CEL NW SE SE, same section.

The U. S. Oil Co. was pulling tubing to drill deeper in No. 1, NW cor. Section 22-22-9. The Sinclair Oil & Gas Co.'s No. 10, CSL SW NE SE, Section 32-22-10, was plugged back from 1,867 feet to the Bartlesville sand at 1,814-49 feet and made 50 bbls. after a 30-quart shot. The same company abandoned No. 16, CNL NE SE, same section, as dry at 2,458 feet.

Breene, Markham & McKinney were getting 225 bbls. natural from No. 9, CNL NW, Section 23-21-10, from the Peru sand at 1,590-1,611 feet, and were to shoot it.

The Barnsdall Oil Co.'s No. 19, CWL NW NW, Section 32-21-12, topped the Mississippi Lime at 1,537 feet and reached the second break at 1,860 feet. The first show of oil was at 1,877 feet and first gas at 1,896 feet. At total depth of 1,918 feet it made 102 bbls. the first 24 hours. This well is located just a quarter of a mile west of the same company's No. 16 on the same lease which startled the oil fraternity a few weeks ago by flowing 4,300 bbls. of 50 gravity crude in the first 24 hours, but declined rapidly.

Gillespie's No. 23, CEL NE, Section 8-20-12, made 100 bbls. from sand at 2,122-24 feet.

In the northern part of Osage County, the Wiser Oil Co. was spudding No. 1, NE cor. SE NW, Section 19-28-9. The Beacon Oil Co. was drilling at 175 feet in No. 2, CWL SE, Section 27-29-11. The Owen-Osage Oil Co. was drilling below 300 feet in No. 229, NW cor. SW NE, Section 28-28-11.

The Knupp Oil Co. was drilling at 300 feet in No. 1 CNL NE NE NW, Section 2-26-11.

A. G. Oliphant was rigging up a machine for No. 1 CSL NE NE SW, Section 19-25-8. The Delmar Oil Co. was swabbing 37 bbls. from No. 1, SW cor. SE, Section 27-25-8, after plugging back from 2,826 feet to 2,540 feet and shooting with 40 quarts in sand at 2,485-2,510 feet. E. B. Lawson had a bad hole at 100 feet in No. 7, CNL NW NW NW, Section 28-25-8, a twin well.

Prime and others were drilling at 1,000 feet in No. 1, SE cor. Section 6-25-11.

It has been several weeks since the Kay County Extension of the Burbank Field passed out of the limelight, so George S. Bole furnished a real eye-opener when he completed not only a good producer as wells go, but also extended the field a location to the west with No. 5 Gaston, CSL SW SE NW, Section 4-27-5, which was good for 642 bbls. the first 24 hours following a 20-quart shot. Sand was reached at 2,891 feet carrying first oil and gas, and the oil increased at 2,896 feet. Total depth was 2,816 feet, in sand.

In the Osage County part of the field, the Phillips Petroleum Co. had a 400-bbl. well as a result of a 120-quart shot in No. 6, C NE SW SW, Section 11-27-5. The well made 100 bbls. natural from sand at 2,978-3,020 feet, with first flow at 2,986 feet. Gas sand at 2,960-78 feet carried 250,000 feet. The same company was spudding No. 13, NW cor. SE, same section.

In the Tonkawa Field, Kay County side, the Cosden Oil & Gas Co. and Marland Refining Co.'s old well, No. 2 School Land, NE cor. SE, Section 33-25-1w, was making 10 bbls. on the pump from sand at 1,206-11 feet.

The Comar Oil Co.'s No. 10-A Endicott, CNL NE SW, Section 35-25-1w, made 12 bbls. on the pump from sand at 2,480-85 feet.

On the Noble County side, the Comar Oil Co.'s No. 18-B, CSL SW NE NE, Section 3-24-1w, was dry and abandoned at 1,900 feet. The Healdton Oil & Gas Co.'s No. 2-C, a deep sand test, CSL NW NW NW, Section 11-24-1w, was drilling at 280 feet. Bay & Williams abandoned No. 1-A, CSL SE SE, Section 20-24-1w, at 1,940 feet.

The Comar Oil Co.'s No. 8 Blubaugh, CSL NW SE, Section 2-24-1w, was good for 27 bbls. natural from sand at 2,549-67 feet. The same company's No. 4-W Carmichael, NE cor. Section 3-24-1w, was producing 2,778 bbls. natural from sand at 4-149-64 feet. Gravity of the oil tested 44.5 degrees.

Northwest of the Tonkawa Field, the Marland Refining Co.'s No. 1 Thomas, SW cor. Section 15-25-2w, was deepened 4 feet to 2,070 feet in sand topped at 2,061 feet and made 85 bbls. in the next 8½ hours. Embry & Leewright abandoned No. 1 Davis, NE cor. SE SE, Section 36-25-2w as dry at 1,096 feet.

East of the Tonkawa Field, the O'Kansas Oil Co. failed to increase the oil in No. 1 Hall, SE cor. NE SW, Section 14-25-1e, passing out of the sand at 3,770 feet. This sand which was topped at 3,755 feet, put 1,000 feet of oil in the hole. The well was drilling at 3,833 feet.

Southeast of this showing, Ossenbeck and others abandoned No. 1 Ray, SE cor. SW, Section 20-24-2e, at 715 feet.

Creek County

In Creek County, J. B. Grieves had a rig in place for No. 2 Grayson, C SE SW, Section 12-19-8. Holmes & Jarvis ran into water in No. 2 West, NW cor. SE NW, Section 17-18-9 and had to set a 3-foot plug at the bottom. Sand was found at 3,199 feet with oil at 3,220-33 feet, and after a 130-quart shot it made 175 bbls. of oil and 80 bbls. of water. The oil declined a few days later to 60 bbls. with the same amount of water as before.

R. M. Galer had a rig up for No. 1 Smith, SW cor. NW NE, Section 29-15-9. The Barbara Oil Co. was spudding No. 1 Simms, NE cor. SE, Section 1-15-10. Hiram C. Wilson was drilling at 300 feet in No. 1 Osbury, SE cor. NE, same section. The Texas Co. abandoned as dry at 3,106 feet its old well, No. 2 Townsite, SE cor. NE, Section 17-15-10. The Wolverine Oil Co. had a rig up for No. 5 Clark, SE cor. SW SW, Section 22-15-10.

The Prairie Oil & Gas Co.'s No. 2 Adams, NE cor. SE NE, Section 27-15-10, was good for 105 bbls. natural from sand at 3,068-71 feet. The Texas Co. was spudding No. 1 Harry, NW cor. NE NW, same section. The H. F. Wilcox Oil & Gas Co. was drilling at 350 feet in No. 7 Post, NE cor. SE NW, Section 33-15-10.

A failure was plugged at 3,783 feet by C. W. West and others in No. 1 Mayes, NE cor. SE, Section 22-14-9. F. R. Billingslea was drilling at 840 feet in No. 1 Barker, SW cor. NW, Section 23-14-9. The Phillips Petroleum Co. had a rig up for No. 2 Brown, SW cor. NW NE, Section 4-14-10, a north offset to Tom Kelly's No. 1 Harry, which made 220 bbls. from sand at 3,294-3,304 feet. The Skelly Oil Co. also had a rig on the ground for the diagonal northwest offset, No. 6 Brown, SE cor. NE NW, same section.

The Cosden Oil & Gas Co. topped the sand in No. 1 Mitchell, SW cor. NW, Section 32-14-10, an east extension to the Tuskegee Pool, and it made a 30-bbl. flow but was shut down for pipe line connections. The Empire Gas & Fuel Co. had a rig up for No. 1 Fixico, a south offset. The Cosden Oil & Gas Co. was drilling at 800 feet in No. 1 Flannagan, SW cor. NW, Section 34-14-10.

Town Lot Drilling

Town lot drilling campaigns are getting to be quite the thing in Oklahoma. Eastern Creek County is the latest area to develop one, the town of Mounds being the scene of feverish operations. S. W. Anthony was spudding No. 1 Townsite, CNL NW SW SE, Section 8-16-12; Dr. Boso Drilling Co.'s No. 1, SE cor. SW SE, was spudded; Daley Brothers had a rig up for No. 1, CEL SE NW SE; P. B. Flynn was building a rig for No. 1, NE cor. NW SE; Henry Oil Co. was also building a rig for No. 1, SE cor. SW NE; Miller Brothers were rigging up a machine for No. 1 Townsite, CEL NW SE; the Riverland Oil Corp. was drilling at 450 feet in No. 7 Marshall, CWL NW SE SE; J. J. Schock and others were spudding No. 1 Townsite, NW SW SE; all in Section 8-16-12, almost exactly 18 miles south of the Lawnwood campaign near Bruner Station, west of Tulsa.

The Sheridan Oil & Gas Co. abandoned No. 2-A White, SW cor. SE, Section 10-16-12, as dry at 2,880 feet.

In the Okmulgee County part of the township, the Oklahoma Natural Gas Co. was drilling No. 2, NE cor. NW NW, Section 25-16-12, at 600 feet.

In western Creek County, the Carter Oil Co. was drilling at 3,135 feet in No. 1 Cott, NE cor. NW NW, Section 2-15-8, an old well. The Pure Oil Co.'s No. 12 Yarhola, NW cor. SW NE, Section 17-15-8, an old well. The Pure Oil Co.'s No. 12 Yarhola, NW cor. SW NE, Section 17-15-8, was drilling at 3,790 feet in sand touched at 3,738 feet and was producing 35 bbls. natural.

The Prairie Oil & Gas Co.'s No. 5 F. Kernal, NE cor. SE, Section 30-14-8, was good for 1,000 bbls. natural the first 24 hours and 928 bbls. the second 24 hours from sand at 3,396-3,404 feet.

In the Strud Field, more new work was starting and some new producers were helping to sustain the field's waning output. J. V. Bailer was drilling at 75 feet in No. 1, Lot 1 and 2, Block 12, Key West Townsite. The J. A. Hull Co. was spudding at 27 feet in its No. 4-A Dowell, CEL SE NW NW, Section 12-14-6. The Roxana Petroleum Corp.'s No. 1 Brace, CNL NE SW, Section 12-14-6, found the pay sand at 4,103-40 feet, making 930 bbls. natural the first 24 hours. The production increased to 1,003 bbls. during the second day and fell back to 897 bbls. on the third day.

Seminole County

Near Wewoka, in Seminole County, W. R. Ramsey and others were drilling No. 1, SW cor. SE, Section 25-8-7, at 1,003 feet.

The recent completion of good wells that extended the original Wewoka Field west started a splurge of activity in that direction. W. R. Ramsey was drilling at 1,300 feet in No. 1, C NW SE SE, Section 30-8-8; the Magnolia Petroleum Co. was drilling below 740 feet in No. 1, SE cor. Section 30-8-8; the Producers & Refiners Corp. was building a rig for No. 1, C NE SW NE, Section 31-8-8; the Boggs Oil Corp. had a rig on the ground for No. 3, C SW NE NE, same section; W. R. Ramsey was spudding No. 1, C SE NW NE, same section; the Boggs Oil Corp. was spudding No. 2, C NE NE NE, same section.

The Dixie Oil Co.'s No. 2 John Long, C SE NE SE, Section 32-8-8, made 51 bbls. from sand at 3,175-3,203 feet. A rig was being built for the same company's No. 3 John Long, C NE NE SE, same section, and a rig and tools were in place for the company's No. 2 E. Parker, C NW NE SW, same section. The Shaffer Oil & Refining Co. was drilling at 500 feet in No. 1, C NW SW NW, same section.

In the Wewoka Field, the Magnolia Petroleum Co. had a rig on the ground for No. 5 Skran, C NW SW NE, Section 33-8-8. The Dixie Oil Co.'s No. 2 L. B. Long, C NW NW SW, same section, made 206 bbls. following a shot of 40 quarts in sand at 3,191-3,212 feet.

East of the field, Johnson & Ash were building a rig for No. 1, C NW NE SW, Section 35-8-8.

Southwest of Wewoka, the Sinclair Oil & Gas Co. abandoned the location for No. 1 Davis, C NE NW SW, Section 23-7-7, after R. H. Smith plugged back from 3,435 feet to sand at 2,680-2,702 feet, which yielded 10,000,000 feet of dry gas, in his No. 1 Carolina, SW cor. SE NW, same section. This well, an old one, encountered a hole full of water at 3,430-35 feet.

In the western edge of Hughes County, the Prairie Oil & Gas Co. was drilling No. 2, C NW NW NW, Section 4-7-8, at 1,350 feet. The Producers & Refiners Corp.'s No. 1 Jacobs, C SE NE, Section 14-7-8, was shut down for orders at 1,405 feet.

Cromwell Pool

In the Cromwell Pool, new wells were still being started in spite of the conditions. The Carter Oil Co. & Gardner Petroleum Co.'s No. 2 Bruner, C SW SE SE, Section 9-10-8, was cleaning out after setting the 15-inch casing at 580 feet. The Pure Oil Co. was drilling No. 2 Bruner, C SE SW SE, same section, at 1,100 feet, and was down below 550 feet in No. 3, a location east. A rig was being built for No. 4, C SW SW SE, same section. The Roxana Petroleum Corp. had a rig on the ground for No. 5 Brown, C NW SW SW, Section 10-10-8. The same company was rigging up a rotary for No. 1 Tiger, C NE SE NE, Section 15-10-8. The H. F. Wilcox Oil & Gas Co. was drilling at 265 feet in No. 8, C SE SE SW, Section 15-10-8. The Carter Oil Co. had a rig on the ground for No. 2 Roberts, C NE SE NW, Section 16-10-8, and the Gilliland Oil Co. was building a rig for No. 6 Proctor, C SW NW NE, same section, and had a rig on the ground for No. 7 Proctor, and No. 8 Proctor, the next two locations south of No. 6.

The McMan Oil & Gas Co. was building a rig for No. 2 Baker, C SE NW NW, Section 16-10-8. The Superior Oil Corp. had rigs on the ground for No. 4 Baker, C SW NE NW, same section; No. 5 Baker, C NW SE NW, and No. 6 Baker, C NE SW NW, same section.

The greatest faith in the extent of the producing horizon has now been displayed by the Tidal Oil Co. since it has started building a rig for No. 1 Bruner, C NE NW NE, Section 17-10-8, three-quarters of a mile west of production.

The Berry Petroleum Co. was drilling at 500 feet in No. 2 Yarhola, C SW NW NE, Section 22-10-8. The Carter Oil Co. had a rig on the ground for No. 1 Harjo, C NW SE SW, Section 22-10-8. This is the farthest south test in the field. The same company also had a rig on the ground for No. 1 Yarhola, C NW SE NE, same section. This is the farthest from production in a southeasterly direction, so far announced. The Cosden Oil & Gas Co. was drilling No. 3 King, C NE SE NW, Section 22-10-8 at 450 feet. The same company was also building a rig for No. 2 Yarhola, C SW NE NE, same section.

About 6 miles west of the Cromwell Field, the Sweeney Drilling Co. spudded and shut down No. 1 Key, C NW SW NW, Section 14-10-7.

In the Papoose Pool, Hughes County,

(Continued on Page 98.)

West Kentucky—Tennessee

By Vern T. Whitney

C. H. Andrus' well in Walker Pool, Allen County, making 200 bbls. Amfot Oil Corp. has 20-bbl. well in McLemore-Gillespie-Price Pool. C. E. Daugherty and others get 15-bbl. pumper in Owensboro; Norris Bros., 12-bbl. pumper in Emery-Moore Pool, Barren County; Turner & English, 25-bbl completion.

BOWLING GREEN, Ky., July 21.—Pipe line runs from the Western Kentucky Field for the month of June amounted to 124,923.91 bbls., an increase of 1,911.48 bbls. compared with May. Gains were reported from Barren and Hopkins Counties, while all other producing counties showed decreases compared with May.

Barren County's runs for June totaled 17,538.17 bbls., an increase of 14,312.60 bbls. This increase was due to crude held over in storage from the latter part of May which could not be moved by the pipe lines on account of a shortage in tank cars.

By counties, the pipe line runs were as follows:

County—	Runs	Increase	Decrease
Warren	48,935.91	.....	3,540.38
Allen	37,146.91	.....	4,639.77
Barren	17,538.17	14,312.60	.....
Owensboro district	10,017.00	.....	773.71
Cumberland-Monroe	7,395.58	.....	3,370.06
Simpson	2,668.12	.....	152.42
Hopkins	1,22222	75.22	.....
Total	124,923.91	14,387.82	12,476.34

Week's Work

During the week there were a total of 19 completions, 14 of which made producers, with a flush of 50 bbls., four dry holes and one gasser. Compared with the previous week, these figures show two more completions, two more producers, 296 bbls. more production, one less duster and one more gasser.

County—	Comp.	Wells	Prod.	Dry	Gas
Allen	8	6	399	2	0
Warren	3	2	32	1	0
Barren	3	2	19	0	1
Owensboro	3	3	32	0	0
Cumb'd-Monroe	2	1	25	1	0
Total	19	14	507	4	1
Last week	17	12	211	5	0
Difference	2	2	296	1	1

Big Well in Allen County

The best well of the year in Allen County was completed the first of the week by C. H. Andrus in his No. 5 Walker, in the Walker Pool, between the Keen and Kerley Pools in southwestern Allen County. At 347 feet, two feet in the sand, the well flowed over the crown pulley and on test made 20 bbls. of 45 gravity oil the first hour. During the first 24 hours the well flowed 380 bbls. Thirteen 100-bbl. tanks of oil have been run from this well so far and late reports state it to be making 200 bbls.

Charles H. Andrus, who drilled this producer, has been active in the developing of the Allen County Field, and is one of the veterans of the Western Kentucky Field. Mr. Andrus and his associates of Chicago are planning extensive operations in this shallow territory during the next few months and will confine the bulk of their attention to wildcatting.

It is reported that the JCS Oil Corp., under the leadership of Col. J. C. Sibley, Jr., is about to enter the Allen County Field. This will mean much to this county, as this corporation is confining its operations to the opening of new territory.

Drilling Operations

There are 32 wells drilling in the county, seven in the north field, four in the west field and 21 in the district to the southwest of Scottsville, including the Kerley, Walker, Mt. Aerial and Keen districts.

Gainesville District — C. R. Borah's No. 9 R. H. Goad shut down at 90 feet; Rehn & Ogle's No. 15 J. L. Grubbs is a rig; McMullen & Reagle's No. 5 J. L. Brown, drilling below the shale; McKinney's No. 2 Wilson, showing for light pumper at 60 feet below the shale; Omar Oil & Gas Co.'s No. 16 Williams, progressing at 268 feet; J. R. English's No. 9 Hobby, on top of the pay sand; John Batty's No. 1 J. Wood was spudding.

Satterfield District—J. G. Esslinger's No. 3 G. W. Willoughby was drilling below the shale; same parties' No. 4 G. W. Willoughby was making ready for a shot at 365 feet; H. A. Kiser's No. 15 Ayers was progressing at 180 feet; Blair & West's No. 1 Goodrum was showing for a good well, naturally, in the second pay below the shale.

Southwest Area — The Freelance Oil Co.'s No. 1 Leffingwell was on top of the pay at 172 feet; Fred Hartman's No. 6 Wheat, drilling at 240 feet; Todd & Berry's No. 13 Graves, making hole at 232 feet; Frank Seaton's No. 3 Bert Hinton, drilling at 212 feet; Russell Oil Corp.'s No. 8 Wygall, Ruby Consolidated Development Co.'s No. 10 F. Dyson, Lewis Oil Corp.'s No. 14-B Stamps, L. D. Robinson's No. 16 in fee, Work & Co.'s No. 3 E. Hinton were all making hole below the shale; Kentucky Developing Co.'s No. 1 H. G. Rather, Foster & Co.'s No. 10 Barbee, Roberts & McNeil's No. 11 Fisher, Dixon & Hobby's No. 1 Dock Dixon, Florence Oil Co.'s No. 7 Lathenwell, Central Producing & Refining Co.'s No. 13 Barbee heirs, H. B. Bastrus' No. 1 W. C. Carver were nearing the pay sand and should be among the completions next week. The Neil-Huebring Oil Co. was spudding Nos. 9 and 10 Kerley; Unique Oil Co. was rigging up to start No. 13 Dan Brown; H. A. Kiser was testing No. 4 Travelstead at 290 feet; Andrus & Millet were moving a rig to No. 6 location on the Walker farm.

Late Completions

R. B. Irwin's No. 7 M. Johnson, in the Gainesville district, was a 2-bbl. pumper at 292 feet; Parks & Co.'s No. 9 Susan Moore started off at 3 bbls. at 432 feet; Omar Oil & Gas Co.'s No. 15 Williams is a 4-bbl pumper at 408 feet; McKinney & Co.'s No. 2 W. C. Wilson is making 5 bbls. at 426 feet, 60 feet below the shale. Fourteen feet of sand was shot with 30 quarts of nitro.

In the old Frost Pool, a few miles south of Scottsville, Cutler and associates finished a 5-bbl. pumper in No. 13 V. Frost at 355 feet.

In the Kerley Pool, Work & Co.'s No. 7 Guy was reported dry at 300 feet, 95 feet below the black shale.

In the Keen Pool, 10 miles southwest of Scottsville, the Benwood Oil Co.'s No. 3 Lambert was dry at around 325 feet.

Warren County Development

In the Warren County Field only three wells were completed, two producers.

In the McLemore-Gillespie-Price Pool, southwest of Bowling Green, the Amfot Oil Corp. scored its seventh successful completion on its Shanks lease. This well, completed at 1,163 feet, started off at 20 bbls. Shale was found from 1,001 to 1,086 feet. Two sands were encountered, the first from 1,093 to 1,097 and the second from 1,144 to 1,157 feet.

In the shallow Rockfield district, Fisher and associates got a duster in No. 1 M. V. Hatcher at 520 feet, Mississippian limestone formation.

In eastern Warren County, Dye Brothers got a 12-bbl. starter in No. 4 Sansom after a 20-quart shot at 450 feet, approximately 40 feet below the shale.

Drilling Progress

Southwest District—Gillespie Oil Co.'s No. 8 Gillespie was drilling at 802 feet; Baker-Jones Syndicate's No. 2 Gillespie, 103 acres was waiting on shot in the deep sand. This well was completed several months ago in the shallow sand where it made considerable oil; the same company's No. 4 Gillespie was making headway at 392 feet; Ruby Consolidated Development Co.'s No. 5 Price-Hall was reported drilling at 523 feet; Olive Green Oil Co.'s No. 6 McLemore was making progress at 597 feet; same company's No. 1 was being drilled to the deep sand; H. W. Ennis & Co.'s No. 2 V. Potter was going downward at 436 feet; Cunningham & Henry's No. 3 Bryant was down 1,090 feet and drilling; D. T. Bolling was spudding No. 1 the Smith Brothers' farm; Illinois Kentucky Oil Co.'s No. 6 Vance was drilling at 234 feet; A. Allen & Co.'s No. 3 Kuykendall was progressing at 432 feet.

Davenport Pool—T. A. Sheridan's Nos. 2, 3, 4 and 5 G. Davenport 1,000 acres were drilling at 550, 750, 230 and 125 feet, respectively; Westland Oil Co.'s No. 25 C. A. Keller was below the shale at 1,080 feet.

Northeast Area—Ohio Fuel Oil Co. was spudding in on No. 7 Garrett; Wood Oil Co.'s No. 14 Jim Isabell was spudding; Royal Oil Co.'s No. 2 R. H. Goe was drilling at 437 feet; Ohio Oil Co. made a location for No. 2 Grider-Gardner and the Wood Oil Co. staked off a location for No. 14 Jim Isabel.

Owensboro District

Three completions, all producers, featured the week in the Owensboro Field, comprising Hancock-Ohio and Daviess Counties.

In the Pellville Pool, the Kentucky Oil Co. got a 5-bbl. pumper in No. 3 W. G. Payne in the Barlow sand at 714 feet. This well was drilled to offset No. 12 on the Amanda Stewart farm; the Dearborn Oil Co.'s No. 2 Taylor 16 acres, offsetting No. 13 Amanda Stewart, is a 12-bbl. pumper in the Barlow sand.

In the vicinity of Herbert school house, C. E. Daugherty and others completed what looks like a 15-bbl. pumper in their eighth venture on the F. V. Miller farm.

Drilling Operations

The Panther Creek Oil Co.'s No. 1 R. M. Miller, Dearborn Oil Co.'s No. 2 W. T. P. Barker, same company's No. 3 Taylor 16 acres, Pennsylvania-Indiana Oil Co.'s No. 5 Abe Howe 45 acres are all due to drill in the first of the coming week. Nutty and others' No. 8 F. V. Miller 36 acres is due in the middle of the week; same parties' No. 2 Ed Barker is being cleaned out; O. C. Boop's No. 1 J. W. Burdette was being held up by engine trouble; Ike Harkless' No. 1 Albert Payne was being held up with a fishing job; Greasy Creek Oil Co.'s No. 2 Dave King was reported with a fishing job; McAdams & Arthur's No. 1 Reardon, at Gorhon, was dry at 800 feet, drilling is being continued to the 1,000-foot mark; C. A. Leeper moved a rig to drill a test on the J. S. Collier farm, south of Deserted Creek and 1½ miles south of the recent Oat Neal well; Bert Thompson moved a rig to the Barlow 40 acres to offset No. 1 on the H. D. Brown farm; George Randolph and others are moving a rig onto the Marshall Knott farm, southeast of Knottsville. This test is a rank wildcat and will mean a great

(Continued on Page 100)

News of Mexican Fields

By George Blardone

TAMPICO, Mex., July 19.—With 10 holes completed during the past week not a barrel of new production was added to the pay column in Mexico. Panuco was responsible for eight failures and the South Fields for two.

The completions in Panuco follow: Cochrane and others' No. 2 Vega (East Maguabes) is a dry hole at 2,183 feet. La Corona Petroleum Co.'s Nos. 90 and 91, Lot 1, Cacalilao, are both dusters at 2,200 feet; its No. 88 Delicas drilled into salt water at 2,100 feet, but will plug back to try for 100 bbls. of production in an upper stratum. East Coast Oil Co.'s No. 214 Halcon is a dry hole at 2,230 feet. Mexican Gulf Oil Co.'s No. 63, Lot 1, Cacalilao, is the same at 1,900 feet. National Railways (Federal zone) No. 10 Tanchicuin, drilled into salt water at 1,950 feet. Vera Cruz Mexico Oil Co.'s No. 2 Buena Vista, did the same at 2,210 feet.

In the South Fields, Mexican Eagle Oil Co.'s No. 2 Horcones will be abandoned at 1,955 feet, a failure. Huastecа Petroleum Co.'s No. 44 Cerro Azul is too deep at the same depth.

High Water

The seven tests, drilling and rigging, of the Cia. Franco Espanola, S. A., a Marland subsidiary, drilling in the Marland Field, in the Hacienda Limon, west of Panuco and south of Ebano, have all been temporarily shut down account high water that is a result of the heavy rains. This applies in some measure to rigs at Ebano also; and likewise accounts for the delay in spudding of the more than one-half score tests rigged and ready to drill in the Tortuga sector of the Salinas just north of Chila station. The rains in the latter place have made the roads impassable, and while the rigs are ready to spud, it is next to an impossibility to move in fuel oil. A few days dry weather, however, should remedy this.

Field Operations

In the Cacalilao sector of the Panuco Field, drilling operations are as follows: La Corona Petroleum Co., Lot 4: No. 101 is drilling in the San Felipe at 1,520 feet; No. 106, fishing in the same at 1,285 feet; No. 108, drilling in shale at 600 feet; No. 113, drilling in the same at 160 feet; and five more locations rigging or preparing to rig. In Lot 1: No. 3 is drilling in the San Felipe at 1,630 feet; No. 96, drilling in lime at 1,820 feet; No. 98, at 2,038 feet in the same formation; No. 102, drilling in the San Felipe at 1,245 feet; No. 104, drilling in a shell at 1,085 feet; No. 105, drilling in shale at 965 feet; No. 107, cemented 8-inch at 1,170 feet in the San Felipe; No. 110, drilling in shale at 850 feet; No. 111, drilling in the San Felipe at 1,250 feet; No. 112, drilling in shale at 593 feet; International Petroleum Co.'s No. 93, Lot 8, Nacata, just west of Cacalilao, cemented 8-inch in the San Felipe at 1,130 feet. Its operations in Lots 4 and 5, Cacalilao, follow: No. 31-A, drilling in pink lime at 1,405 feet, with a small showing of gas; No. 58,

(Continued on Page 104)

From One Week to Ten Days Ahead

The weekly estimates of the production of crude oil in the United States, published in The Oil and Gas Journal, are from one week to ten days ahead of estimates by any other organization.

This fact well known to readers of The Oil and Gas Journal who, from long and profitable experience, "swear by" our figures, was impressively demonstrated during the past two weeks.

The Oil and Gas Journal estimates for the week ending July 5 showed an increase in production for the United States of 22,863 barrels daily. Another estimate, published in the daily press, reported for the same week a decrease of 7,300 barrels.

But for the week following, that ending July 12, this other estimate reported an increase of 24,400 barrels, while The Oil and Gas Journal showed a decrease of 14,068 barrels.

In other words, The Oil and Gas Journal's increase of the week of July 5 was not reported in the other estimate until the following week, when, as a matter of fact, The Oil and Gas Journal's figures showed there had been an actual decrease of 14,000 barrels.

To go into details, take the estimates for the production in Wyoming-Montana and California where most of the discrepancy appears and it is seen conclusively that the reports from the staff correspondents of The Oil and Gas Journal on the spot are at least one week in advance of the other estimates.

Or you may observe the record in regard to the production of the Luling, Texas, Field. Scouts of oil companies who have made a special study of that field from personal knowledge, have reported that the production there during June never averaged in any week below 42,000 barrels and rose as high as 52,000 barrels.

The reports issued to the daily press for the week ending June 7 gave the production at Luling as 36,000 barrels; for the week ending June 14, 35,000; for the week ending June 21, 35,750 barrels, and for the week ending June 28 as 32,900 barrels.

For the same period The Oil and Gas Journal estimated the production at Luling as follows: For the week ending June 7, 46,000 barrels; for the week ending June 14, 47,000 barrels; for the week ending June 21, 41,000 barrels; and for the week ending June 28, 38,000 barrels, while for the week ending July 5 The Oil and Gas Journal showed an average production of 50,000 barrels and the other report had but 37,250 barrels. Reports of oil companies showed the actual production for that week to have averaged 50,131 barrels daily.

When it comes to the production in Oklahoma, the State in which The Oil and Gas Journal is published, the superiority of its estimates is unquestioned. These estimates are closely checked from all the fields on Tuesday of each week, whereas the other report is sent out the previous week.

From which it is clear that The Oil and Gas Journal's estimates are easily and always from one week to ten days ahead and not only ahead but accurate.

California Field Operations

By L. P. Stockman

Completions and initial production at Torrance for week disappointing. Long Beach steadily declining. Hope of extension of Huntington Beach eastward abandoned. Union Co.'s No. 4 Hellman, Dominguez, makes 1,825 bbls., tenth producer in field. No. 1 Gardena reaches a depth of 7,307 feet.

LOS ANGELES, Calif., July 21.—Both the number of completions and the initial output of new wells at Torrance during the past week were somewhat disappointing. The Chanslor-Canfield Midway Oil Co., the field's largest individual operator, put two new wells on production, one the banner well for the week. No. 17 Del Amo is listed as a 130-bbl. pumper from 3,686 feet. It was finished with an 8¼-inch oil string including 635 feet of 80-mesh screen casing landed on bottom. The oil tests 21.2 degrees and shows a cut of 3 per cent. No. 49 Torrance, the company's record well, made 540 bbls. during the first 24 hours from 3,735 feet. It was finished with a 6¼-inch oil string including 415 feet of 80-mesh screen casing. The oil, which is clean and tests 25.3 degrees, is flowing through a ½-inch bean under a pressure of 330 pounds. No. 52 Torrance is scheduled to be put on a production test within a few days as the 8¼-inch oil string is being run in.

E. J. Miley completed his development work at Torrance auspiciously and his new producer showed only a slightly smaller initial production than No. 49 Torrance of the Chanslor-Canfield Midway Oil Co. Miley's No. 7 Torrance came in flowing 530 bbls. of 20.6 gravity oil which showed a cut of 1 per cent. It was drilled to the same depth as Nos. 5 and 6 on the same lease, 3,835 feet, and was finished with a 6½-inch oil string, including 240 feet of 60-mesh screen casing. The completion of this well increases Miley's output in this field to 3,725 bbls. a day.

The Shell Oil Co., although actually finishing the drilling work on several wells, only succeeded in putting one on production. No. 6 March, the Shell's new producer, tanked 520 bbls. of clean 18.1 gravity oil during the first day's complete production test. This well, which is flowing through a ½-inch bean under a pressure of 600 pounds, required only two strings of casing. It was finished with an 8¼-inch liner carrying 280 feet of 50-mesh Kobe screen casing.

The Standard Oil Co. succeeded in placing three wells on production during the week but two of them were work-overs. No. 2 Sentinel-Joughin was the Standard's latest acquisition to its list of producers. It came in flowing 320 bbls. of 18.1 gravity oil and, while the output shows a cut of 15 per cent, it will undoubtedly clean up after the rotary drilling fluid has become exhausted. There was a little sand present but the quantity was negligible. The well was drilled to 3,840 feet and finished with an 8¼-inch oil string, including 300 feet of 50-mesh standard slotted pipe. The two remaining wells which the Standard put on production were No. 1 Kettler and No. 14 Marble fee. These were former producers which had sanded up. No. 1 Kettler, which had bailed sand for several days, is at present pumping 30 bbls. of 16.2 gravity oil, still cutting about 10 per cent sand. No. 14 Marble fee made 170 bbls. on the beam of 26.2 gravity oil, which shows a cut of 5 per cent.

The Pan American increased its daily production 280 bbls. as the result of the completion of No. 2 Hub. The company's new well, which was drilled to 3,880 feet, was finished with a 6¼-inch oil string including 260 feet of 60-mesh standard slottd pipe. The oil, which tests 18.9 degrees and shows a cut of 2 per cent, is flowing through a ⅝-inch bean under a pressure of 260 pounds. The Associated Oil Co. finished No. 3 Cunningham and, true to expectations, it was only a comparatively small pumper. On the beam it registered 205 bbls. of 20.4 gravity oil during the first day. It was drilled to 3,654 feet and finished with an 8¼-inch oil string carrying 502 feet of 120-mesh screen casing. On the same lease, the company finished well No. 2 at 3,713 feet and a small pumper is scheduled to be brought in.

Small Producers

The Superior Oil Co. put No. 38 Torrance on the beam during the week after drilling it to 3,810 feet but secured only a small well. It was listed as a 100-bbl. pumper of 18.6 gravity oil. This new producer proved somewhat of a surprise and it is quite probable the output will increase after the well has cleaned itself. The Mohawk Oil Co. secured a 135-bbl. pumper when well No. 1 was put on a production test. The company originally drilled to 3,877 feet but because of bottom water it was found necessary to plug back to 3,840 feet. The plugging operation apparently proved successful as the output, which tests 19.8 degrees, shows a cut of only 4 per cent. The Dabney & Delaney's No. 1 Lomita was the smallest and most unsatisfactory well put on a test as the maximum output of 50 bbls. daily is cutting 28 per cent. This well, originally completed several months ago, came in flowing 1,150 bbls. but it has been off production because of sand and water trouble. Judging by the present high percentage of water, the hole is still in a bad condition and will require further work. The Petroleum Midway also completed a rather unsatisfactory well when No. 1 Lord was put on a production test. The maximum daily output was 45 bbls. of 15.2 gravity oil, which showed a cut of 18 per cent. The company was obliged to take it off the pump and will endeavor to make it a good producer. The Fullerton Oil Co. and the Selby Root Oil Co. each completed a well and preparations are being made to put them on production. The latter's No. 8 was drilled to 3,800 feet, while the former's No. 8 Cotton was finished at 3,810 feet.

The Petroleum Securities Co. (Doheny) has started actual operations on its two Kleine-Meyer leases and, in addition to spudding in well No. 1 and erecting several new rigs on Kleine-Meyer lease "A," is hauling in material for well No. 1 on Kleine-Meyer lease "B." On lease "A" rigs have been erected for wells Nos. 2, 3, 4, 5 and 16 and material is on the ground for Nos. 6, 7, 8, 17 and 32. This company recently concluded development work on its Marble property where 28 wells were completed without the loss of a single hole. The property was completely drilled up in record time and, judging by the extensive operations started and projected on the Kleine-Meyer leases, another intensive development program will be inaugurated. It is not believed, however, that the company will experience the same degree of success with its present undertaking that it had in the past with its Marble property. Doheny has always had unusual good fortune with his oil properties in California, however, and if the production underlies the Kleine-Meyer lease it is needless to say the Petroleum Securities will secure it.

Long Beach

The number of new wells at Long Beach has been getting smaller for some time and, notwithstanding that a large well or two is finished every few weeks, the daily production is gradually but surely declining. Preliminary estimates indicate the average daily production in this district during the past month, June, will be in the neighborhood of 160,000 bbls., a decline of approximately 6,000 bbls. from the output of the previous month. The production is running around 155,000 bbls., indicating that the output during July will show a further drop. The decrease in production has been general and practically all of the operators show a smaller output. The Shell Oil Co., the discoverer and principal operator with 75 flowing wells and 25 pumpers, has probably been the most successful in maintaining production to date. The company is running approximately 45,000 bbls. of crude, only 10,000 bbls. a day less than its high peak. The field, on the other hand, has dropped from its maximum of approximately 260,000 bbls. to 155,000 bbls. at present, a decrease of over 100,000 bbls. The best well finished at Long Beach the past week, No. 1-A Babb of the Shell Oil Co., was only a mediocre one. It was drilled to 4,950 feet and finished with a 5⅞-inch liner, including 1,350 feet of 60-mesh screen. Maximum output was 135 bbls. of 24.6 gravity oil, which showed a cut of 4 per cent. The company's No. 18 Alamitos, completed at 4,850 feet, seems to have plenty of kick and indicates that when it is put on production, probably within a few days, it will be good for at least 500 bbls. The 5-O Drilling Co., after a long and hard struggle with the Turner Oil Syndicate's well No. 1, has secured a 75-bbl. producer. The oil, which is clean and tests 24.5 degrees, is coming from 4,750 feet. This new producer, which will probably never pay out, will undoubtedly cause a good deal or trouble, principally because of the difficulty in pumping. There were several wells finished which were not put on production tests and, judging by present indications, a few will appear on next week's completion list.

Swabbing In

The A. T. Jergins Syndicate completed well No. 10 at 4,800 feet and this well, together with the Petroleum Midway Co.'s No. 5 Fields, should be swabbed in shortly. The Bartholomae Oil Co. is experiencing a good deal of trouble with well No. 4 and, although it has been bailed and swabbed for several days, it refuses to flow. The well is not very favorably located, but there is a possibility a small well may be secured. The Marine Oil Co., after spending several weeks' time trying to make a producer of well No. 23, has suspended work at 5,300 feet and is concentrating its attention on No. 16 at 4,800 feet and No. 17 at 4,560 feet. The Paramount Oil Syndicate has renewed operations on its deep hole, which has been standing idle for some time at 5,240 feet, and will attempt to put this deep test on production.

Long Beach experienced its second rather disastrous fire during the latter part of the week when a fire, originating at the Fisher Oil Co.'s well No. 7, destroyed six derricks and several tanks of oil. Four men were injured, one of whom suffered burns when he was trapped on the top of a derrick by a sudden shifting of the wind. The fire was extinguished after burning for several hours and resulting in a property loss of about $50,000. Rigs in the burned area are very close and it is miraculous the fire was so well controlled. Alex Scott, an employe of the Fred B. Foster Co., proved the hero of the day, following his discovery of a small blaze near the top of one of the Foster derricks. The heat was intense and black smoke nearly prevented breathing. In spite of these handicaps he carried a small hose to the top and extinguished the blaze. When he climbed down an official of the company handed him a $100 check.

Santa Fe Springs

In the Santa Fe Springs Field the Federal Drilling Co. finished deepening No. 1 Clark during the week from 4,580 feet to 4,616 feet and secured a 120-bbl. pumper at 32.1 gravity oil. The Shell Oil Co. is drilling ahead in No. 6-A Slusher, a deep test well in the center of the field at 5,991 feet, and, since there has been no showings of oil or gas noted, the prospect of securing deep production is not very favorable. The hole began to cave around 4,500 feet and it is possible that this condition will cause the company some trouble. The Standard got a fair showing of oil in No. 2 A. O. Houghton and set a string of 6¼-inch at 4,619 feet. The only other wells being drilled by the Standard are No. 3 W. L. Houghton at 4,500 feet, No. 4 Orr at 4,585 feet and No. 6 Jordan at 3,670 feet. The hope for an eastern extension of the Huntington Beach

(Continued on Page 114)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Cape Cod, July 9, New York, crude	74,344
E. T. Bedford, July 11, New York, crude	120,017
Agwilake, July 12, New York, crude	90,988
Coastwise	
Lebec, July 7, Portland, fuel	75,021
W. S. Porter, July 8, Linnton, fuel	50,252
Lubrico, July 10, Portland, fuel	85,750
Frank G. Drum, July 11, Seattle, fuel	70,094
W. S. Miller, July 11, Portland, crude	75,909
La Placentia, July 11, Martinez, crude	70,116
Cathwood, July 13, Martinez, crude	74,438
Cepolis (Br.), July 7, China, fuel	55,013
Invergarry (Br.), July 7, England, refined	70,866
San Salvador (Br.), July 8, England, refined	66,747
From San Francisco	
Stockton, July 7, Seattle, fuel	76,430
Tahchee (Br.), July 12, China, fuel	63,916
Argon, July 12, China, fuel	75,381
S. C. T. Dodd, July 13, Portland, refined	72,421
Atlas, July 13, Gray's Harbor, refined	15,483
Gargoyle, July 14, Philadelphia, refined	81,960
From Port San Luis	
Coalinga, July 10, Oleum, fuel	71,462
La Purisima, July 10, Oleum, refined	32,182
Oleum, July 11, Coos Bay, fuel	30,715

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North-Central Texas Field

By Dan F. Dugan

Production declines 4,815 bbls. Big Lake Co.'s No. 10 University Land, Reagan County, now making 1,450 bbls. Wildcat near Dudley, Calhoun County, estimated 30 to 50 bbls., followed by letting contracts for six wells 20 miles from production and market. Watkins Pool, Wichita County, active.

FORT WORTH, Tex., July 21.—The North Texas Field wandered into the lost production column the past seven days with a decrease of 4,815 bbls. daily, compared with the previous week's runs. Every district reported a loss with the exception of Stephens County, which made a gain of 335 bbls. daily. The losses were distributed as follows: Burkburnett, 1,350 bbls.; Electra, 835; Iowa Park, 1,575; Eastland, 220 and the wildcat pools 1170 bbls. daily with a total production reported at 123,125 bbls. daily. This loss can be charged to the prorating of runs, the several decreases in the posted price and the refusal of the major pipe line companies to connect with a large per cent of the late completed producers.

Completions in the south sections of the field remained about stationary in number with the number of weekly completions for several months past. Only one well of producing importance was reported a completion during the week. It is located in Reagan County, a strictly wildcat district, drilling around 2,985 feet, the Big Lake Oil Co.'s No. 10 University land penetrated the pay and the well responded with a flow around 1,450 bbls. daily. This is the largest initial producer ever drilled in the State of Texas, west of the deep lime producing territory. In Eastland and Shackelford Counties, a total of 15 completions was reported; of that number seven were oil producers and eight were dry holes.

In the northern district a total of 46 wells were completed, a substantial decrease from the number completed last week; of that total 22 were oil producers, one gasser from Potter County and 23 dry holes, making a total for the entire field of 61 completions, 29 listed as oil producers, 31 dry holes and one gas well.

Reagan County's Sensation

The completion of the Big Lake Oil Co.'s No. 10 University Land in Reagan County was nearest to a sensation that happened in the North Central Texas Field during the past week. It would have been a startling happening if its sister well, No. 9, had not been completed 10 days previously as a gusher producer.

It is reported from San Angelo that the Big Lake Oil Co.'s No. 10 University land struck pay at 2,954 feet, and drilled only 4 feet into the sand. The flush production the first hour was 115 bbls. and in the first 21 hours the well flowed at the rate of 77 bbls. an hour, or 7½ bbls. an hour more than the Big Lake Co.'s No. 9's high run to date. Gas in No. 10 is stronger, making it a better well than No. 9, which is 1,600 feet due south. No. 9 is 1,334 feet due east of No. 1 Santa Rita. It struck oil at 2,970 feet, drilling only 3 feet into the sand, which makes No. 10 exactly 25 feet higher on the structure. No. 10 is reported by scouts this week a completion for 1,450 bbls. at 2.958 feet.

Within 10 days the Big Lake Oil Co. will have a storage capacity of 30,000 bbls. or three times what it is at the present time. Production of 3,500 bbls. a day at $1.50 a barrel is giving the University of Texas a daily royalty of $656.25.

The Texon Oil & Land Co. is testing out a promising show of oil obtained at 2,148 feet in its Texas group No. 1 University, 1¾ miles southeast of the Santa Rita and south of the Orient railroad. This is the highest oil sand struck in the field.

The Gulf Production Co. issued an order, the latest by any of the big purchasing companies at the time this review was written, cutting North Texas production 50 cents a barrel, paying $1.75 a barrel for all top gravity grades but no prorating order accompanied the cut in the posted price order.

A curtailment program which was generally agreed to some weeks ago when the market showed signs of slumping with the view of decreasing all drilling to the minimum, has not been lived up to as anticipated. A few operators have faithfully kept to their agreement, but the majority, unable to withstand the strain of shutting down even for a short period, in an effort to keep down the output, reneged.

Dudley Wildcat

Reports from the new wildcat strike near the inland town of Dudley in Callahan County, 30 miles west of Pioneer, place the well's estimated production from 30 to 50 bbls. a day, but with no means of caring for the oil at hand and the nearest market 20 miles distant the owners are keeping it shut in and no gauge or even accurate estimate can be had. Experienced operators agree that the well will make a commercial producer when opened. Late reports from that section state contracts have been let for drilling six wells. The new well is the property of the Dudley Oil & Development Co. and is more than 20 miles from any other production.

Less Archer County Completions

There was but little change in field work during the past week, the number of reported completions decreased about 40 per cent with no large initial producers in the list. There was a slight decrease in the number of new locations, but the number of drilling tests failed to show very little change from the previous week.

The largest completion for the week was the Panhandle Oil & Refining Co.'s No. 2 Orton which is showing 200 bbls. at 1,780 feet. A semicompletion of importance is the Bridwell & Heydrick No. 7-F Wilson which swabbed 300 bbls. at 1,585 feet.

The Barclay-Hobbs wildcat, No. 1 Wright, 3 miles northwest of the Swastika Field, has been semicompleted for a 15 to 20-bbl. pumper. It is also showing some water. This is believed to be an edge well and a location has been made 680 feet west for another test.

The Superior Oil Corp.'s No. 1 Kinder, 4 miles east of Archer City at 1,707 feet stopped drilling in hard lime. It will be plugged back to an oil bearing sand at 1,294 feet and tested.

Holmes and others started bailing their No. 1 Wilson just east of Archer City, dropped the bailer in the hole, but later recovered it. The test, drilled into 18 inches of sand at 1,298 feet which showed oil. The well is now reaming down to reset the casing on the sand.

North of The Texas Co.'s No. 1 Pease completed last week, Norton and others' No. 2 Graham is a near completion for a daily production of 150 bbls. The sand was reached at 1,439 feet.

South of Archer City, the test of Chambers and others' No. 2 Andrews, about 1½ miles south of the Major Petroleum Co.'s producer on the Turbeville, is showing for a nice well at 975 feet. It made an exceptionally large amount of gas for an Archer County well. The well is being standardized to completed.

Wichita County Activity

A number of wells were completed in the Beaver Creek and Watkins Pools, and several new locations were made in that territory.

The most activity in the county is being shown in the Watkins, Hill-Roberts district to the south and west of Iowa Park. Several good producers with a daily average of 150 bbls. were reported.

On the Peeler tract J. A. Gardner and others placed their No. 1 on the pump and it is showing for one of the best to be finished in that pool, making around 300 bbls. daily.

On the Overby tract the Electra-Gulf Oil Co.'s No. 4 Murray, offsetting the Gardner well to the north, was semicompleted and is swabbing 300 bbls. daily from the sand at 1,668 feet. The same company's No. 6 is drilling at 1,740 feet.

In the same district John O'Donohoo (Pet producers Co.) is completing No. 3 Maer, offsetting the Underwood Drilling Co.'s producers to the south. The sand was picked up at 1,651 feet, at present it is swabbing at the rate of 250 bbls. per day. No. 4 is drilling at 1,200 feet.

The McDabb Oil Co.'s No. 3 Potter in the Clara Pool is abandoned as dry at a depth of 2,000 feet after having showings of oil at several depths during its completion.

Couch and others in the shallow field south of Burkburnett finished No. 3 Donchoo in the sand at 1,300 feet. Placed on the pump it made 30 bbls. daily.

As in other pools throughout the county, the Burkburnett section is showing little activity. The majority of operators, taking advantage of the lull, are repairing their powers and cleaning out many of the old producers.

The Plains Pipe Line Co.'s pipe line to Panhandle City from the Carson County producing field is moving oil as fast as tank cars can be obtained and more than 10,000 bbls. is now in storage at the Reece S. Allen refinery at Amarillo. A new company, to be known as the Amarillo Refining Co., will operate the plant, which has been idle for more than a year. Allen will retain an interest and will have L. V. Jackson of Wichita Falls and W. D. Gwynn of Iowa Park associated with him. Jackson was formerly with the Texhoma Oil & Refining Co. as sales manager and Gwynn was with the Wichita Valley Refining Co.

Burkburnett-Hirschi

Completions: Constantine Refining Co.'s No. 1 Roberts, dry at 2,230 feet; Couch and others' No. 3 Donohoe, 30 bbls. at 1,310 feet; Grace Oil Co.'s No. 3-B Daniels, 20 bbls. at 1,500 feet; Harvey Oil Co.'s No. 20 Ruyle, dry at 1,690 feet; Hunter and others' No. 1 Musgrave, dry at 1,650 feet; Magnolia Petroleum Co.'s No. 6 Treece, 35 bbls. at 1,700 feet; McDabb Oil Co.'s No. 3 Potter, dry at 2,005 feet.

Drilling: Baldwin Brothers' No. 16-C Kennedy, coring oil sand at 1,080 feet; Magnolia Petroleum Co.'s No. 6 Beach, drilling in brown shale at 1,015 feet; Texhoma Oil & Refining Co.'s No. 1-B Rexford, drilling in blue shale at 1,330 feet; White and others' No. 1 Donohoe, bailing and testing broken oil sand at 1,320 feet.

Wichita County Completions

Completions: The Texas Co.'s No. 295 Waggoner, 25 bbls. at 1,770 feet; Carter and others' No. 1 Burnett, dry at 1,900 feet; Humble Oil & Refining Co.'s No. 1-C Jeff Waggoner, dry at 2,000 feet; same company's No. 3-B Burnett, dry at 2,060 feet; Keltz and others' No. 1 Gibson, dry at 2,005 feet; Kruger and others' No. 9-A Waggoner, dry at 1,960 feet; O'Neil and others' No. 2 Burnett, dry at 1,965 feet; Texhoma Oil & Refining Co.'s No. 4-C Burnett, 200 bbls. at 1,580 feet; same company's No. 5-C Burnett, 145 bbls. at 1,580 feet; United Central Oil Corp.'s No. 6 McCarty, 200 bbls. at 1,690 feet; Gardner and others' No. 1 Peeler, 310 bbls. at 1,660 feet; Hill and others' No. 7 Overby, 35 bbls. at 1,495 feet; Moore and others' No. 2 Allen, 75 bbls. at 1,625 feet.

Drilling: The Texas Co.'s No. 294 Waggoner, drilling in oil sand at 1,615 feet; Adams and others' No. 1 Wigley, drilling in rock at 1,700 feet; Apple and others' No. 5 Jennings, pulling casing to abandon at 1,890 feet; Burnett Ranch Oil Co.'s No. 3 Burnett, rigging to pump and test sand showing oil at 1,575 feet; No. 4 Burnett, drilling at 700 feet; Clopton and others' No. 1 Waggoner, drilling in shale at 700 feet; Camp Oil & Gas Co.'s No. 11-B Douglas, trying to sidetrack 100 feet of drill pipe at 1,930 feet; Culbertson and others' No. 26 Jeff Waggoner, drilling dry sand at 1,510 feet; Douglas and others' No. 3-A Jennings, fishing for tools at 515 feet; Empire Gas & Fuel Co.'s No. 5 Pierce, drilling in shale at 1,220 feet; Evangeline Petroleum Co.'s No. 1 Burnett, drilling in soft rock at 600 feet; Evans and others' No. 2 Fisher, shut down for orders with small show of oil at 700 feet; Gulf Production Co.'s No. 61 Miller, reaming to bottom at 1,230 feet; No. 22-A Burnett, standardizing to put on the beam and test sand at 1,585 feet; No. 23-A Burnett, drilling at 970 feet; No. 9 Mrs. Collett, drilling in shale at 615 feet; Hammond and others' No. 1 Burnett, drilling at 700 feet; Howell and others' No. 1 Burnett, drilling at 1,570 feet; Jackson and others' No. 1 Black, drilling in shale at 1,475 feet; Jaffee and others' No. 1 Jeff Waggoner, drilling at 1,490 feet; Kentucky Oil Corp.'s No. 1 Burnett, bailing water from broken sand at 1,610 feet; Lee and others' No. 1 McCarty, setting 6⅝-inch casing on top of oil sand at 1,306 feet; Magnolia Petroleum Co.'s (for the McMann Oil Co.) No. 36-A Waggoner, underreaming 5$\frac{3}{16}$-inch casing at 1,910 feet; No. 37-A Waggoner, drilling at 1,065 feet; No. 3-C Waggoner, drilling in shale at 1,870 feet; O'Neil and others' No. 3 Burnett, drilling at 100 feet; Panhandle Oil & Refining Co.'s No. 6 McCarty, drilling at 100 feet; Ryan Petroleum Co.'s No. 22 Nance, bailing and testing oil sand at 1,660 feet; Rio Bravo Oil Co.'s No. 7-A Waggoner, drilling at 1,000 feet; Shaw and others' No. 2 McCarty, drilling in shale at 600 feet; Stacy and others' No. 1-B Burnett, coring and testing sand at 1,970 feet; Section Two Oil Co.'s No. 2 Burnett, swabbing to clean out, sand showing oil at 1,590 feet; Texhoma Oil & Refining Co.'s No. 6-C Burnett, setting 6⅝-inch casing on top of oil sand at 1,567 feet; No. 7-C Burnett, drilling at 1,050 feet; No. 8-C Burnett, drilling in shale at 1,135 feet; Texhoma Co. and others' No. 1 Burnett, drilling in rock at 1,910 feet; United Central Oil Corp.'s No. 7 McCarty, bailing oil sand at 1,673 feet; No. 8 McCarty, drilling at 350 feet; Doctor Wallace's No. 3 Fassett, drilling in blue shale at 1,870 feet.

K. M. A. District

Drilling: Bower and others' No. 1 Peeler, drilling at 1,045 feet; Campbell and others' No. 1 Chilson, bailing oil

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THE "GUMBO BUSTER" ROTARY IMPROVED

The old Gumbo Buster was good—the new still better.
—Made in 19″ and 20″ sizes.

Split hinged lifting ring permits locking in the Master Wheel and turning entirely around, should the tongs fail to grip the tool joint.

—Eliminates damages to drill pipe by slips.

—Drive clamp furnished to fit either "V" grooved, or square drill stem.

This new Master Wheel or table may be used on Gumbo Buster Rotaries of previous design.

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Texas, Oklahoma, Louisiana, Arkansas

Manufactured by

AMERICAN WELL & PROSPECTING CO.

CORSICANA, TEXAS—CALIFORNIA BRANCH, LOS ANGELES

Builders of Substantial Service Giving Rotary Equipment Since the Beginning of Rotary

sand at 1,830 feet; Cline and others' No. 1-B Allen, drilling in shale at 1,590 feet; Church and others' No. 2 Maer, drilling at 1,590 feet; Dee and others' No. 1 Mangold, drilling in rock at 1,710 feet; Electra Gulf Oil Co.'s No. 4 Mrs. Murray, swabbed 400 bbls. at 1,660 feet; No. 6 Mrs. Murray, drilling in shale at 1,665 feet; Gulf Production Co.'s No. 1 Rhodes, drilling at 1,170 feet; Moore and others' No. 3 Allen, drilling at 1,730 feet; Parker Brothers' No. 1 Love, underreaming 8¼-inch casing at 1,410 feet; Petroleum Production Co.'s No. 4-A Allen, testing oil sand at 1,635 feet; No. 3 Maer, bailing oil sand at 1,650 feet; No. 4 Maer, drilling in shale at 985 feet; Underwood Drilling Co.'s No. 4 Maer, drilling at 685 feet; United Central Oil Corp.'s No. 1 Mrs. Murray, tested a sand showing salt water at 1,775 feet.

Wilbarger County Drilling

Barker and others' No. 1 Morris, drilling at 125 feet; Dill Farm Oil Co.'s No. 1 Dill, drilling at 250 feet; Dumas and others' No. 1 Stephens, drilling at 660 feet; Herring and others' No. 1 Castleberry, drilling with rotary at 850 feet; Magnolia Petroleum Co.'s No. 45 Sumner, drilling in shale at 1,335 feet; Noble Oil Co.'s No. 1 Waggoner drilling at 1,650 feet; Pigg and others' No. 1 Davis, repairing boiler at 650 feet; South Vernon Oil Co.'s No. 1 Richardson, fishing at 1,255 feet; Thelma Wells No. 1 Wharton, showing about 1,000,000 feet of gas and drilling at 1,540 feet.

Archer County Completions

Completions: Brader and others' No. 1 Farmer, 45 bbls. at 1,265 feet; Cato and others' No. 1 Mask, dry at 1,404 feet; Creath and others' No. 1 Hawkins, dry at 1,730 feet; Dillday and others' No. 1 Ferguson, dry at 3,438 feet; Hill and others' No. 1 Wilson, dry at 1,560 feet; Humble Oil & Refining Co.'s No. 1 Orton, 50 bbls. at 1,592 feet; Kentucky Oil Corp.'s No. 1 Wilson, dry at 1,650 feet; Kinney and others' No. 1 Mrs. Porter, dry at 1,810 feet; Knight & Hines' No. 2 Ragle, 50 bbls. at 1,083 feet; Murchison and others' No. 4 White, 75 bbls. at 1,606 feet; Murchison and others' No. 1 White, 75 bbls. at 1,403 feet; Panhandle Oil & Refining Co.'s No. 2 Orton, 200 bbls. at 1,790 feet; Prairie Oil & Gas Co.'s No. 8-E Wilson, 80 bbls. at 1,576 feet; Scott and others' No. 1 Farmer, dry at 1,540 feet; Tucker and others' No. 3 Mrs. Carter, 20 bbls. at 1,578 feet; same company's No. 4 Mrs. Carter, 15 bbls. at 1,383 feet; Winam and others' No. 1 Meurer, dry at 1,655 feet; Woodburn Oil Corp.'s No. 9-B Wilson, 35 bbls. at 1,398 feet.

Drilling: Alford and others' No. 1 Schlimpf, spudding; Allen and others' No. 1 White, 700 feet of oil in hole and drilling at 1,605 feet; Andrade and others' No. 1 Graham, coring oil sand at 1,450 feet; Archer Oil Corp.'s No. 2 Farmer, drilling at 1,200 feet; Bridwell and others' No. 7-F Wilson, swabbed 300 bbls. in 24 hours from sand at 1,585 feet; Buie Production Co.'s No. 1 Kelley, drilling at 1,565 feet; Camp Oil & Gas Co.'s No. 2-B Wilson, drilling at 500 feet; Cannon and others' No. 1 Jackson, drilling at 100 feet; Carey Drilling Co.'s No. 4 Wilson, ratholing at 1,620 feet; Chambers and others' No. 1-B Andrews, bailing oil sand at 980 feet; Dee Brothers' No. 1 Andrews bailed salt water from sand at 1,330 feet; Dixon and others' No. 3 White, drilling at 305 feet; Donohoe and others' No. 4 Wilson, drilling in shale at 1,550 feet; Franklin and others' No. 11 Parrish, testing oil sand at 1,600 feet; Gulf Production Co.'s No. 3 Seigle, flowing salt water from sand at 1,570 feet; Hart and others' No. 1 Turbeville, drilling at 1,200 feet; Hobbs and others' No. 1 Wright, trying to shut off water from sand at 1,412 feet; Holmes and others' No. 1 Wilson, will test sand showing oil at 1,295 feet; Humphrey and others' No. 3 White, drilling at 1,085 feet; Jefferies and others' No. 1 Parrish, fishing for 6⅝-inch casing at 1,670 feet; Kimbrew and others' No. 3 Perkins, drilling in shale at 1,790 feet; No. 4 Perkins, drilling at 1,065 feet; Knight & Hines' No. 3 Ragle, spudding; Lowry and others' No. 1 Harbison, set 6⅝-inch casing on top of oil sand at 1,345 feet; Mahlstedt & Mook's No. 2 Wilson, drilling in oil sand at 1,608 feet; Magnolia Petroleum Co.'s No. 2 Robertson, flowed 70 bbls. from sand at 1,400 feet; Major Oil Co.'s No. 4 Turbeville, drilling in shale at 820 feet; McLain and others' No. 1 Richardson, spudding; McPhail and others' No. 1 Wilson, drilling at 1,480 feet; Nance Oil Co.'s No. 1 Zota, drilling in rock at 1,630 feet; Norton and others' No. 2 Graham, standardizing on top of oil sand at 1,440 feet; Oil Investment Co.'s No. 1 Robertson, drilling at 850 feet; Panhandle Oil & Refining Co.'s No. 3 Orton, drilling at 1,225 feet; Waite Phillips' No. 1 Chancellor, drilling in shale at 1,800 feet; No. 1 Ford, drilling at 1,430 feet; No. 1 Wilson, drilling in rock at 1,515 feet; Prairie Oil & Gas Co.'s No. 9-E Wilson, drilling in shale at 1,200 feet; Riner and others' No. 9 Wilson, Block 29, shut down in dry sand at 1,620 feet; Shamrock Oil Co.'s No. 4-D Richardson, drilling in shale at 1,230 feet; No. 5-D Richardson, drilling at 1,090 feet; Sheppard and others' No. 1 Albright, repairing boiler at 1,220 feet; Simms Oil Corp.'s No. 1 Nichols, preparing to pump and test oil sand at 1,615 feet; Sunshine State Oil & Refining Co.'s No. 1 Key, fishing for tools at 1,392 feet; Superior Oil Co.'s No. 1 Kinder, drilling in shale at 1,530 feet; Texhoma Oil & Refining Co.'s No. 4, K. & K., 70 feet of oil in hole and drilling at 1,600 feet; Tex-O-Kan Oil Co.'s No. 1 White, preparing to pump oil sand at 1,400 feet; Woodburn Oil Corp.'s No. 8-B Wilson, drilling in shale at 1,605 feet.

Young County

Completions: Byrens and others' No. 1 Mahoney, 10 bbls. at 3,935 feet; Henson and others' No. 1 McMillan, dry at 3,605 feet; McGuire and others' No. 1 Carter, dry at 2,885 feet; Seaboard Oil & Gas Co.'s No. 5 Hughes, dry at 2,810 feet.

Drilling: Bashara and others' No. 1-A Graham, drilling in shale at 1,000 feet; Burton and others' No. 1 Mayes is a rig; Carter and others' No. 1 Rubenkoenig, drilling in lime at 4,180 feet; Dunn and others' No. 1 Johnson, spudding; Foster and others' No. 2 Mahoney, fishing at 3,885 feet; Humble Oil & Refining Co.'s No. 1 Graham, drilling at 965 feet; Keener Oil Co.'s No. 1 Bashara, drilling in rock at 2,760 feet; Logan and others, No. 1 Hulse, drilling at 1,140 feet; McGarr and others' No. 1 Johnson, drilling in shale at 1,755 feet; No. 1 Scarborough, drilling at 1,150 feet; Miller and others' No. 1 Hume, drilling at 2,150 feet; Monroe Production Co.'s No. 1 Vaughn, drilling in rock at 2,395 feet; Mutual Oil Co.'s No. 12 Driver, drilling in shale at 1,950 feet; Peter Oil Co.'s No. 1 Simms, show of oil and gas from sand at 740 feet; Reed and others' No. 1 Graham, drilling at 475 feet; States Oil Corp.'s No. 1 Fee, drilling in lime at 3,640 feet; Union Oil Co.'s No. 1-A Keithley, drilling at 2,075 feet.

Stephens County

Completions: Walker & Caldwell's No. 10 Walker & Caldwell, 25 bbls. at 3,250 feet; Brown and others' No. 1 McClenney, dry at 4,165 feet; Welch and others' No. 1 Sandidge, dry at 2,205 feet.

Drilling: Brown and others' No. 1 Hudspeth, drilling in shale at 2750 feet; Critten and others' No. 5 Cobb, drilling in rock at 2,445 feet; No. 2 Cunningham, drilling at 2,635 feet; No. 3 Cunningham drilling with show of gas at 2,336 feet; Glasscock Production Co.'s No. 1 Cunningham, fishing for casing at 1,430 feet; Ivan Petroleum Co.'s No. 2 Martin, drilling in lime at 3,560 feet; Liner and others' No. 2 Brown, drilling at 1,200 feet; Marchbanks and others, No. 1 Hudspeth, showing 35 bbls. of oil and 3,000,000 feet of gas and drilling in gray lime at 3250 feet; Mid-Kansas Oil & Gas Co.'s No. 13 Hill, drilling in shale at 2,185 feet; No. 14 Hill, drilling at 2,435 feet; No. 5 Hill, drilling at 3,020 feet; No. 3 Lowe, underreaming 12-inch casing at 950 feet; No. 2 Lowe, drilling up bailer at 2,510 feeet; No. 3 Richardson, drilling by casing at 3,185 feet; Prairie Oil & Gas Co.'s No. 15 Atkins, fishing for a bailer at 3,263 feet; No. 1 Caldwell, drilling at 1,910 feet; Raney-Buckeye Oil Co.'s No. 2 Walker & Caldwell, drilling in lime rock at 3,590 feet; Rochelle and others' No. 2-A Sweeney, fishing for casing at 1,400 feet; No. 3-A Sweeney, drilling at 1,805 feet; The Texas Co.'s No. 20 Black, drilling in lime and shale at 3,290 feet; Texas Pacific Coal & Oil Co.'s No. 5 Rogers, drilling at 3,665 feet; No. 6 Rogers, pulling big pipe at 3,125 feet; Walker and others' No. 1 Walker, estimated 250 bbls. a day production and drilling in gray lime at 3,260 feet; No. 2 Walker, 300 bbls. day production and drilling in gray lime at 3,245 feet; Weekly Petroleum Co.'s No. 1 Cobb, drilling at 1,630 feet; Baker and others' No. 1 Crowley, showing 6,000,000 feet of gas and spraying some oil and shut down at 3,205 feet; Fouts and others' No. 1 McCleskey, drilling at 785 feet; Haile and others' No. 2 Jones, drilling in lime at 3,[illegible] feet; Humble Oil & Refining Co.'s No. 2 Jones, showing 500,000 feet of gas and drilling in black lime at 3,915 feet; Ivan and others, No. 1 McCleskey, spudding; Little and others' No. 2 Drake, drilling by casing at 3,650 feet; Magnolia Petroleum Co.'s No. 9 Brown, pulling 6-inch casing to sidream at 3,120 feet; No. 6 Brown, drilling by tools at 3,215 feet; No. 1 Gardner, spraying oil and drilling at 4,415 feet; No. 2 Gardner, running 5-inch casing at 3,852 feet; No. 7 Stoker, drilling in lime at 3,605 feet; No. 1 Taylor, drilling at 625 feet; Pearson and others' No. 2 Williams, showing oil and drilling at 2,125 feet; Pennok Oil Co.'s No. 1-B Jones, testing casing at 3,100 feet; Pitzer and others' No. 1 Stoker, showing 5,000,000 feet of gas and spraying oil and fishing for tools at 3,950 feet; Prairie Oil & Gas Co.'s No. 1 Stoker, drilling in lime at 3,795 feet; Republic Oil Co.'s No. 4 Jones, underreaming 12¼-inch casing at 870 feet; Scott and others' No. 1 Davis, showing 1,500,000 feet of gas and 20 bbls. of oil and drilling in gray lime at 3,190 feet; Seaboard Oil & Gas Co.'s No. 1 McCleskey, drilling at 1,485 feet; Sinclair Oil Co.'s No. 9 Henderson, drilling in shale at 2,975 feet; Snowden & McSweeney's No. 1 Jones, drilling at 3,630 feet; No. 11 Jones, drilling at 2,910 feet; States Oil Corp.'s No. 1 Sikes, drilling in black lime at 3,140 feet; No. 1 Williamson, showing 15,000,000 feet of gas and drilling in lime at 3,570 feet; Sun Oil Co., No. 2 Boone, drilling at 3,280 feet; Swensondale Oil Co.'s No. 1 Houston, drilling at 2,400 feet; The Texas Co.'s No. 8 Heathley, drilling at 2,240 feet; No. 10 Heathley, drilling at 2,465 feet; No. 40-A Parks, showing 15 bbls. of oil a day and cleaning out after shot at 3,250 feet; Texas Fidelity Oil Co.'s No. 1 Cooke, drilling at 1,930 feet; Texas Pacific Coal & Oil Co.'s No. 1 Haines, drilling water sand at 2,085 feet; No. 1-B Winston, drilling at 900 feet; Triplehorn Petroleum Association's No. 1 Adams, is spudding; Walker and others' No. 1 Newman, drilling at 2,180 feet.

Eastland County

Completions: Knox-Lewis Oil Co.'s No. 1 Simmons, dry at 1,218 feet; Panhandle Oil & Refining Co.'s No. 20 Hightower, dry at 1,215 feet; same company's No. 7 Webb, dry at 1,300 feet; Parder and others' No. 1 Hague, dry at 1,500 feet; Republic Oil Co.'s No. 2 Sneed, 10 bbls. at 1215 feet; Lowe and others' No. 4 Haines, 20 bbls. at 2,535 feet.

Drilling: Adams and others' No. 1 Dawson, shut down for casing at 1,400 feet; Andrade and others' No. 1-A Gilbert, drilling at 470 feet; Buffington and others' No. 1 Foster, a fishing job at 900 feet; Dixie Oil Co.'s No. 1 Waggoner, pulling liner to shoot at 3,685 feet; Barkley and others' No. 5 Wright, drilling at 3,675 feet; Haynes and others' No. 1 Howard, drilling at 520 feet; Humble Oil & Refining Co.'s No. 3 Sneed, drilling at 960 feet; No. 4 Sneed, spudding; Kirk & Brewer's No. 1 Young, drilling at 2,830 feet; McLester and others' No. 1 Gaily, drilling in shale at 1,720 feet; Mid-Kansas Oil & Gas Co.'s No. 6 Harrell, drilling in lime at 3,540 feet; Parsons and others' No. 1 Moles, drilling at 950 feet; Pennok Oil Co.'s No. 7 Purton, drilling at 425 feet; Root and others' No. 1 Wheeler, spudding; Bobo and others' No. 1 Amis, drilling in lime and shale at 3,230 feet; Continental Oil Co.'s No. 1 Sneed, drilling at 3,240 feet; Donneely Brothers' No. 1 Stubblefield, showing 3,000,000 feet of gas and drilling at 3,290 feet; McBride and others' No. 1 White, shot with 200 quarts, bridged and cleaning out at 2,797 feet; The Texas Co.'s No. 1 Ramsey, underreaming 12½-inch casing at 1,258 feet; Texas Development Co.'s No. 1 Rushing, drilling at 1,650 feet; Thornhill and others' No. 1 Stubblefield, drilling at 2,900 feet.

Wildcats

Baylor County—Drilling: Crandall and others' No. 2 Mills, drilling at 900 feet; Crittendon and others' No. 1 Coffee, drilling in brown shale at 1,425 feet;

(Continued on Page 94)

News from Fields of Canada

By Victor Lauriston

EDMONTON, Alta., July 19.—A recent visit to the Irma-Wainwright Field of east-central Alberta shows a fair amount of drilling activity now under way, with prospects of additional work being done before the season closes, particularly if the tests now drilling there secure production.

The prospective oil metropolis is not Edmonton, which is already provincial capital of Alberta, but the little prairie town of Wainwright, some 100 miles farther east. Wainwright has a rival in the still smaller town of Irma. As things now stand, both places are situated on top of what is probably the biggest gas field in the Canadian West, and there is proven gas production within reach of both places. Whether a commercial oil fields also exists will probably be finally determined by this season's drilling operations.

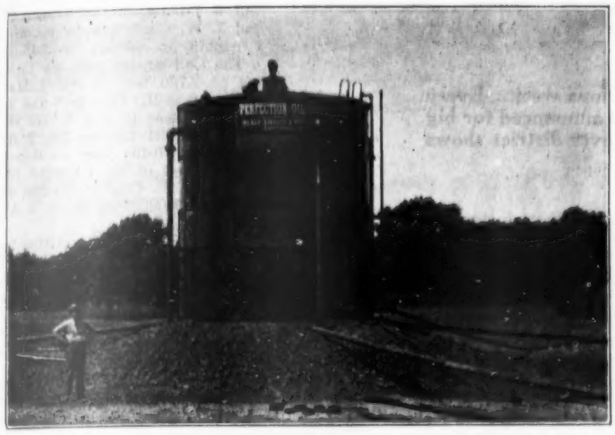
East of Irma, the Canadian Northern train passes the site of the much discussed Imperial Oil, Ltd. Fabyan No. 1, on the edge of Battle River Coulee, Section 18-45-7w-4. It is impossible to convince people at Irma that this well is not a commercial oil producer, shut in by Imperial Oil, Ltd. for some malevolent purpose; and they point to black, greasy patches on the hillside in support of their statements and declare than whenever the well is allowed to blow open it sprays light oil all over the premises for as much as 20 minutes. The actual status of the well, however, has been pretty well settled by official tests made last fall by Dr. R. T. Elsworthy of the Department of Mines; who reported a large gas production with traces of a heavy, tarry substance. This substance is apparently a petroleum residue; and the fluid sprayed whenever the well is opened is a sort of emulsion formed by this product and water under high pressure. The well is a good commercial gasser, shut in for lack of a market, but it not an oil well. Contrary to common belief, the gas is not a wet gas.

Wainwright today shows less excitement than usual for an oil boom town. The people are confident they have an oil field, at least in the making; but they are not excited about it. The confidence seems to be based partly on the Imperial's "Fabyan gusher," which the Government report shows to be fabulous, and on the real show of heavy oil struck last fall in British Petroleum No. 2. Today, one outfit, owned largely by Wainwright people, is drilling close to the town. The Irma people also have a local oil company, a derrick, a string of tools and an unfinished test on the fringe of their town. The remaining tests are farther out on the prairie.

This spring has brought many mysterious visitors to Wainwright; and there

(Continued on Page 94)

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STELL TANKS



A Perfection Vapor Pressure Flow Tank earning money for its owner.

WHAT THE COMPLETE PERFECTION BATTERY REALLY DOES

Holds the gravity of oil at its highest and thus earns gravity premiums.

Saves clean dry gas for lease fuel, or for gasoline purposes. No oil is lost with the gas.

Stops all gaugeable evaporation losses. This loss may be as much as four barrels to the hundred of production.

Increase net cash returns from production so considerable as to quickly pay for vapor pressure tankage. As one producer said: "The only Tanks that never cost me a Nickel."

Make Your Conservation Campaign Effective

The whole world now moves on oil.

Therefore this big fundamental industry cannot go to smash. There always will be dark days like the present, but such a period is bound to be only temporary.

We join with all other organizations in urging all producers to be conservative—don't drill in wells needlessly; conserve every bit of your crude that's being pumped.

Your conservation campaign of course is not complete without installation of Perfection Vapor Pressure tanks on your lease.

They are deadly enemies of evaporation, the direct cause of your heaviest losses in storage, both as to quantity and gravity.

Better still these tanks will not cost you a cent—the saving effected makes that possible.

Get in touch with our representative in your locality today. He has ample stocks on hand.

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North Louisiana-Arkansas

By M. L. Vaughn

Cotton Valley shows material increase in output over previous week. Every district in Arkansas showed a decline in production. Plans announced for big power plant for Monroe Field. Drilling activity in Smackover district shows decline. Slight increase in total production.

SHREVEPORT, La., July 21.—Cot-Valley production is beginning to make an impression on the output of the Louisiana Field, the daily average of which for the past week shows an increase of 2,960 bbls. a day. Runs from the Cotton Valley Field increased from 2,270 to 5,600 bbls. a day, some of the new wells being practically free of salt water and b. s. and requiring little or no treating. Slight declines in Bellevue, Caddo, De Soto and Red River and Elm Grove were partially offset by increases in the Haynesville and Homer districts, the daily average production of the entire North Louisiana Field amounting to 55,580 bbls.

Every district in the Arkansas Field showed a decline in production during the past week, the daily average amounting to 148,585 bbls. a decrease of 2,120 bbls. a day compared with production of the previous week. The total daily production of the combined fields averaged 204,165 bbls., distributed as follows:

North Louisiana	
Bellevue	4,830
Caddo light	10,625
Caddo heavy	2,550
Cotton Valley	5,600
De Soto and Red River	4,535
Elm Grove	860
Haynesville	12,670
Homer	7,910
Total	55,580
South Arkansas	
El Dorado	12,875
Nevada County	1,490
Smackover light	37,015
Smackover heavy	94,880
Stephens	2,325
Total	148,585
Total both fields	204,165
Increase	840

Big Power Plant

Plans for a gigantic power system which may revolutionize conditions in the Monroe gas territory, have been announced by H. C. Couch, and it is understood that construction work will be started at once. Mr. Couch is identified with the Arkansas Light & Power Co. of Pine Bluff, Ark., through whom financial arrangements have been completed for the building of a 30,000 horsepower electric plant to cost in the neighborhood of $2,500,000. The plant will be built on acreage owned by the Union Power Co. at Stirlington, in the Monroe gas field, and will be so constructed that with very little outlay its power can be doubled.

High tension towers will be built east of Monroe as far as Vicksburg, Miss., where they will connect with power properties at Jackson and western Mississippi points. They will also run north into Arkansas, to be combined with power developed by hydro-electric projects on the Ouachita River.

The power will also be used for industrial development in West Monroe where a number of important manufacturing concerns are already located and negotiations in progress which will ultimately bring a number of cotton and textile mills and other industries to this section.

Union County Completions

Completions in the Union County area Smackover Field during the past week numbered 19, with an aggregate initial production of 1,913 bbls. There were two failures, and one gas well.

J. E. Crosbie, trustee, completed No. 2 Alphin, Section 29-16-15, flowing 200 bbls., at 2,057 feet, and No. 2 Smith, Section 19-16-15, swabbing 300 bbls. at 2,058 feet.

Cross and others completed No. 3 Polk & Ezell, Section 18-17-14, pumping 75 bbls. at 2,157 feet.

The Gulf Refining Co.'s No. 11 Hardy-Murphy, Section 4-16-15, made a 40-bbl. pumper at 2,005 feet.

Hollyfield and associates completed No. 2 Burton, Section 30-16-15, swabbing 500 bbls. at 2,122 feet.

The Humble Oil & Refining Co.'s No. 3 Flenniken, Section 3-16-15, made a 108-bbl. pumper at 1,965 feet.

The Imperial Oil & Gas Co. completed No. 2 Smith, Section 29-17-14, pumping 175 bbls. at 2,212 feet.

The Morris Drilling Co. completed No. 7 Flenniken, Section 5-16-15, pumping 40 bbls. at 1,999 feet.

The Pure Oil Co.'s No. 6 L. Hicks, Section 29-16-15, is pumping 100 bbls. at 2,056 feet.

Ramage and others completed No. 2 Smith, Section 18-16-15, pumping 60 bbls. at 2,065 feet.

Sam Richardson's No. 2 L. Lawton, Section 10-16-15, made a 30,000,000-foot dry gasser at 2,330 feet.

Sanford and others completed No. 4 Berry, Section 8-16-15, pumping 100 bbls. at 2,005 feet.

John Seip and others completed No. 2 Hedgewood, Section 24-16-16, pumping 90 bbls. at 2,085 feet.

Smitherman-McDonald have abandoned No. 3 Saxon, Section 5-16-16, at 2,625 feet.

The Sun Co.'s No. 3 Wilson, Section 19-16-15, made a 75-bbl. pumper at 2,115 feet.

The Sure Oil Co. completed No. 8 Smith, Section 24-16-16, swabbing 350 bbls. at 2,068 feet.

Thurman and others have abandoned No. 1 Goodwin, Section 23-16-16, at 2,150 feet.

The Unity Petroleum Co. completed Alphin A-7, Section 24-16-16, flowing 800 bbls. at 2,080 feet.

The Veccino Syndicate completed No. 2 Burton, Section 25-16-16, swabbing 600 bbls. at 2,092 feet.

Ouachita County

Evidence of the decline in drilling activity is plainly shown in the small number of completions reported from the Ouachita County area of the Smackover Field during the past week, the completions numbering only 11 with two failures and initial production amounting to 990 bbls.

Dasko and others completed No. 1 T. C. Joyce in Section 34-15-16, pumping 150 bbls. at 1,985 feet.

Finley and others have abandoned No. 1 LaGrone in Section 26-15-17, at 2,304 feet.

The Forest Oil Co.'s No. 2 Minor, Section 20-15-16, is flowing 240 bbls. at 2,317 feet.

The Gilliland Oil Co. completed No. N-3 Wells, Section 25-15-17, flowing 30 bbls. at 2,282 feet.

The Gulf Refining Co.'s No. 7 Fincher, Section 28-15-16, made a 75-bbl. pumper at 2,255 feet.

The Magnolia Petroleum Co. completed No. 9 Smith, Section 31-15-16, pumping 90 bbls. at 2,243 feet, and got salt water at 2,507 feet in No. 3 Hardin, Section 20-15-16, and the well has been abandoned.

The Owenwood Oil Corp. completed No. 3 Snyder, Section 34-15-15, pumping 200 bbls. at 1,964 feet.

The Texas Co. completed No. 6 W. A. Smith, Section 31-15-16, pumping 50 bbls. at 2,255 feet, No. 7 Snow, Section 30-15-16, pumping 65 bbls. at 2,297 feet, and No. B-4 Solmson, Section 32-15-16, pumping 90 bbls. at 2,254 feet.

Cotton Valley

Development in the Cotton Valley district during the past week was somewhat disappointing, hoped for extensions of the field proving only big gassers, and pumpers instead of gushers resulting from drilling in proven territory.

The Ohio Oil Co.'s No. 1 Crichton in Section 21-21-10, 1½ miles southwest of production, came in at 2,541 feet, making 40,000,000 feet of gas, with a light mist of oil, and there i sthe possibility of its eventually flowing into a gas well as so many of the wells in this field have done.

Hude & Aarnes completed their first test on the Cox lease in Section 22-21-10, between the Crichton well and the field, making 30,000,000 feet of gas at 2,523 feet.

The Fortuna Oil Co.'s No. 1 L. Merritt in Section 14-21-10, made a 200-bbl. pumper at 2,543 feet.

The Oil Field Gas Co. completed No. A-1 Hope estate, Section 13-21-10, pumping 35 bbls. at 2,528 feet.

Bellevue Field

Olmstead and others completed No. 8 Strange, Section 23-19-11, pumping 10 bbls. at 330 feet.

The Standard Oil Co.'s No. 13 Bliss & Weatherbee, Section 10-19-11, made a 1-bbl. pumper at 404 feet, probably the smallest well in this territory ever commercialized.

Caddo Parish

In the Pine Island district, the Dixie Oil Co. completed No. 61 Robertshaw, Section 13-21-15, pumping 12 bbls. at 1,700 feet, and Tarver & Bashara completed No. 11 Crye Lane, Section 22-21-15, pumping 10 bbls. at 1,640 feet.

Ouachita Parish

The Central Carbon Co. completed No. 2 Lieber, Section 4-19-5, making 5,000,000 feet of gas at 2,223 feet.

Ladel and others completed No. 25 fee, Section 30-19-5, making 4,000,000 feet of gas at 2,227 feet.

The Standard Carbon Co.'s No. 1 Perry, Section 8-19-5, is making 2,000,000 feet of gas at 2,212 feet.

Union Parish

R. E. Allison tested dry at 2,625 feet in No. 1 Frost Johnson Lumber Co., Section 15-23-1e, and the well has been abandoned.

Arkansas Wildcats

Hempstead County: Johnson and others have abandoned their test on the Spates lease in Section 12-13-27, at 2,520 feet.

Nevada County: The Kenark Oil Co. has abandoned its No. 2 White in Section 11-13-21, testing dry at 1,410 feet.

Union County Drilling

The Arkansas Fuel Oil Co. is drilling its No. 1 Dumas, in Section 29-16-15, at 1,753 feet; set 6-inch casing at 1,947 feet in No. 4 Alphin, Section 11-16-15; and set 10-inch casing at 164 feet in No. 2 J. E. Murphy, in Section 8-16-16. The Black Duke Oil Co. is drilling No. 1 Wilson, in Section 19-16-15, at 1,025 feet.

Bond, trustee, has derrick up for No. 3 Powell, in Section 19-16-15; Caldwell and others set 10-inch casing at 62 feet in No. 3 Hancock, in Section 25-16-16; the Cherokee Petroleum Co. set 10-inch casing at 65 feet in No. 3 Burton, in Section 25-16-16; set 10-inch at 65 feet in No. 4 Burton; at 85 feet in Nos. 5 and 6 Burton, all in Section 25-16-16, and J. W. Clark has derrick up for No. 2 Alphin, in Section 19-16-15.

The Constantine Refining Co. is drilling at 2,736 feet in No. 1 Morgan, in Section 2-18-16; Crawford and Sebastian have set liner to test 4 feet of broken sand at 1,994 feet in No. 7 Giller, in Section 11-16-15; they set 6-inch casing at 2,223 feet in No. 4 Graves, in Section 3-16-15; J. E. Crosbie, trustee, set 6-inch casing at 2,000 feet in No. 4 Alphin, in Section 29-16-15.

Cross and others are waiting for standard rig with 10 feet of sand and 500 feet of oil in the hole at 2,105 feet in No. 2 Smith, in Section 13-16-16; the Dunn Oil Co. set 6-inch casing at 2,008 feet in No. 1 Burton, in Section 25-16-16, and also set 6-inch casing at 1,986 feet in No. 4 Smith, in Section 18-16-15.

Eason and others set 6-inch casing at 2,035 feet in No. 1 Hilton in Section 24-16-16; they set 6-inch casing at 2,000 feet in No. 2 Hilton in the same section; the Federal Petroleum Co. set 6-inch casing at 2,198 feet in No. 2 Childs, in Section 8-16-16; East and others set 10-inch casing at 42 feet in No. 1 Thompson, in Section 5-17-15; the Gilliland Oil Co. set 10-inch casing at 62 feet in No. 4 Staples, in Section 1-16-17.

The Gulf Refining Co. is drilling plug at 1,900 feet in No. 8 M. Alphin, in Section 2-16-15; they are drilling sand at 2,086 feet in No. 2 Hegwood, in Section 13-16-16; they are bailing casing at 2,220 feet in No. 19 L. Werner, in Section 6-16-16; they set 10-inch casing at 90 feet in No. 21 L. Werner, in Section 6-16-16.

Additional Operations

Harrell and others are drilling red gumbo at 3,099 feet in No. 1 Teele, in Section 11-19-12; Holliday, trustee, is drilling his No. 4 Goff, in Section 6-16-16 at 2,047 feet; the Humble Oil & Refining Co. set 6-inch casing at 2,035 feet in No. 2 Adcock, in Section 22-16-15; it set 6-inch casing at 2,061 feet in No. 2 Burton, in Section 25-16-16; is swabbing to test 15 feet of sand at 2,084 feet in No. 3 Burton, is drilling at 1,740 feet No. 4 Burton, all in Section 25-16-16; is drilling red gumbo at 2,993 feet in No. 1 Cordell, in Section 1-18-14; and set 6-inch casing at 2,035 feet in No. 3 J. S. Smith, in Section 18-16-15.

Jett and others set 10-inch casing at 211 feet in No. 1 Morgan, in Section 29-17-14; Kinnebrew and others set 6-inch casing at 1,886 feet in No. 3 Williams, in Section 3-16-15.

The Magnolia Petroleum Co. is drilling red gumbo at 3,540 feet in No. 1 Smith, in Section 2-16-17, and is drilling No. 1 I. Smith at 2,401 feet in Section 2-16-17. Meek, trustee, set 6-inch casing at 2,036 feet in No. 2 Burton, in Section 25-16-16.

The Ohio Oil Co. found casing OK at 2,009 feet in its No. 1 Scott, in Section 19-16-15, and waiting orders to drill in. Page and others are drilling in shale at 2,335 feet in No. A-1 Alphin, in Section 30-16-16; the Phillips Petroleum Co. has derrick up for No. B-2 Alphin in Section 11-16-15.

The Pure Oil Co. set 8-inch casing at 2,050 feet in No. 2 L. M. Hicks, in Section 29-16-15; is waiting for standard rig with 500 feet of oil and 3 feet of sand at 2,073 feet in No. 1 Lindsay, in Section 29-16-15. It set 8-inch casing at 2,030 feet in No. 2 Lindsay, in the same section. The Riggs Drilling Co. is waiting for standard rig, after drilling 3 feet deeper, in 9 feet of sand at 2,270 feet in No. 1 Rice, in Section 6-16-16.

W. E. Rutledge, trustee, is arranging to set liner in 5 feet of sand at 2,307 feet in No. 1 Carruth, in Section 7-16-15; is waiting for standard rig in 13 feet of sand and 500 feet of oil in the hole at 2,261 feet in No. 1 Hodges, in Section 1-16-17; and has derrick up for No. 3

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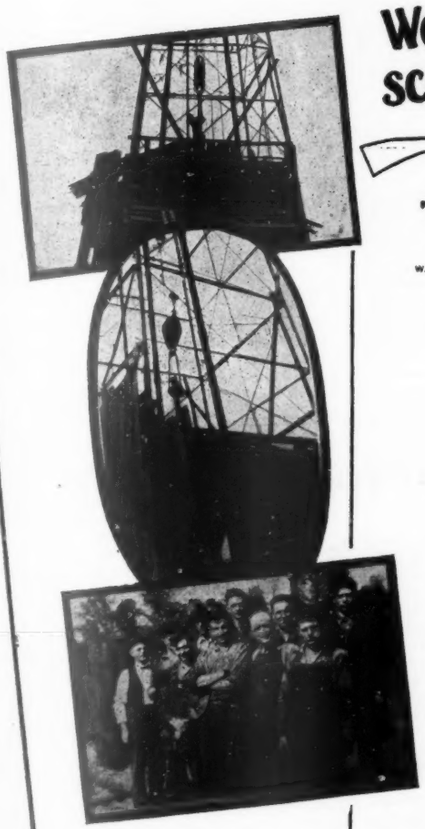

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Hodges, in Section 6-16-16. Simon and others are drilling their No. 1 Burton, in Section 25-16-16, at 1,800 feet.

The Standard Oil Co.'s No. 5 Alphin, in Section 2-16-15 stands 1,100 feet of oil at 1,975 feet. It is bailing fluid in No. 1 J. S. R. Saxon, in Section 4-16-16, which rises 150 feet over night and is 50 per cent salt water and 50 per cent oil at 2,305 feet.

Starke and others have shut down their No. 1 Little, in Section 21-19-12, for fuel at 2,601 feet; the Staves Oil Co. cemented 6-inch casing at 2,010 feet in No. 2 Moore, in Section 25-16-16, and is arranging to test 14 feet of sand at 2,066 feet; the Sun Oil Co. set 10-inch casing at 66 feet in No. 4 Wilson, in Section 19-16-15.

The Texas Co. is waiting orders in 11 feet of sand at 2,113 feet in No. 5 Hedgewood, in Section 24-16-16. It set 6-inch casing at 2,034 feet in No. 6 Hedgewood, in the same section, and 10-inch casing in Nos. 7 and 8 Hedgewood in Section 24-16-16.

The United Central Oil Corp. set 10-inch casing at 142 feet in No. 1 Burton, in Section 25-16-16, and set 6-inch casing at 1,942 feet in No. 1 Craig, in Section 15-16-15. The Unity Petroleum Co. set 6-inch casing at 2,006 feet in No. A-5 Alphin, in Section 24-16-16, and 10-inch casing at 65 feet in No. B-3 Alphin in Section 24-16-16. It also set 10-inch casing at 66 feet in No. C-3 Alphin, in Section 24-16-16. Waxler and others set 5-inch casing at 2,024 feet in No. 2 Moore, in Section 24-16-16.

Ouachita County Drilling

Difficulty in disposing of production and the recent cut in the price of Smackover oil has had its effect on the drilling activity in this territory and at the close of the week there were only 35 rigs running in the Ouachita County area of the field, with 18 arranging to pump, 3 rigs and 16 derricks and 7 locations.

Anderson and others are arranging to pump No. 3 fee and set 6-inch casing in No. 4, Section 20-15-17; Arkansas Drilling Co., drilling at 2,100 feet in No. 3 Reynolds, Section 24-15-17, and Arkansas Fuel Co has derrick up for No. 4 Snyder, Section 34-15-15.

Arkansas Invincible Oil Co. is drilling at 1,863 feet in No. 5 McRea, Section 30-15-16; derricks are up for No. 3 Myar estate, Section 30-15-16 and No. 9 Patton, Section 31-15-16 and setting full string of 5⅞-inch casing at 2,090 feet in No. 8 Patton, Section 31-15-16.

Atlantic Oil Producing Co. has 1,000 feet of oil in hole in Brierton C-2, Section 24-15-17 and arranging to pump at 2,278 feet; drilling at 2,142 feet in Rowland C-1, Section 20-15-16; set 10-inch at 68 feet in No. 4 Smith, Section 25-15-17, and arranging to pump Wells A-4 with derricks up for Wells B-2, B-3 and B-4 in Section 25-15-17.

Bray-Hawthorne are drilling at 1,600 feet in No. 1 Copenhaven, Section 13-15-17; Dr. Clark, drilling at 1,925 feet in No. 1 Schoolyard, Section 28-15-16; Clark & Melatt, drilling at 1,960 feet in No. 1 Murphy, Section 4-16-15, and J. E. Crosbie set 10-inch casing at 1,998 feet in No. 3 Berry, Section 33-15-15.

E. L. Farris has 600 feet of oil in hole in No. 1 Anderson Section 26-15-17; Finley and others, drilling at 1,800 feet in No. 1 Keller, Section 25-15-17; Forest Oil Co. set 8-inch casing at 2,240 feet in No. 15 Cramer, Section 22-15-16, and Giles, trustee, has derrick up for No. 1 Burton, Section 31-15-17.

Gilliland Oil Co. is arranging to test at 2,277 feet in No. 3 McRea, Section 25-15-17, setting tubing in 14 feet of sand at 2,260 feet in No. 1 A. W. Smith and derrick up for No. 3, Section 36-15-17, bailing to test 12 feet of sand at 2,276 feet in Wells N-4, Section 25-15-17, and derrick up for Wells S-3, same section.

The Gulf Refining Co. set 16-inch casing at 2,210 feet in Werner, Section 28-15-16; Herman & Jackson set 10-inch casing at 40 feet in No. 1 Shirley, Section 36-15-17; Hunt and others have rig up for No. 1 Green in Section 23-15-17, and Lee Trustee set 10-inch casing at 40 feet in No. 1 Page, Section 26-15-17.

Leon and others are arranging to pump No. 2 Patton and have rig up for No. 3, Section 32-15-16; Magnolia Petroleum Co. plugging back to 2,250 feet in Smith B-8, Section 31-15-16 and Majestic Smackover Syndicate set 10-inch casing at 62 feet in No. 3 McElroy, Section 29-15-16.

Marr Oil Corp. is arranging to deepen No. 6 Mullins, Section 28-15-16, formerly completed as a 1,000,000-foot gas well with a spray of oil at 2,053 feet. Morefield and others are drilling at 300 feet in No. 1 McDaniels, Section 28-14-17; R. B. Nelson set 10-inch casing at 56 feet in No. 4 Anderson, Section 26-15-11, and derrick up for No. 3 Jeffus, Section 26-15-17.

Phillips Petroleum Co. has 600 feet of oil in hole in No. 5 Hearnesberger, Section 33-15-15, and arranging to pump at 2,003 feet; Palemetto Oil Co. set 6-inch casing at 2,243 feet in No. 4 Reynolds, Section 25-15-17; J. S. Smith has 25 feet of fluid in hole in No. 1 Shirley, Section 35-15-17, and the Southern Oil Co. set 6-inch casing at 1,852 feet in No. 1 Hoffman, Section 22-15-17.

The Standard Oil Co. is setting liner in 82 feet of broken sand at 2,007 feet in No. 4 Griffin, Section 33-15-15; Staves and others, drilling plug at 2,302 feet in No. 2 Jeffus, Section 26-15-17; Stumph & Todd, rigging up to drill No. 3 LaGrone in Section 30-15-16, and Sun Oil Co. is swabbing to test 10 feet of sand at 2,300 feet in No. 4 Berry, Section 24-15-17.

Sutton and others have locations made for Nos. 7, 8, 9, 10 and 13 and derrick up for No. 12, Section 28-15-16; set 6-inch casing in No. 16 Hughes, Section 21-15-16, and in No. 2 D. Minor, Section 20-15-16, and The Texas Co. set 6-inch at 2,247 feet in No. 7 Stringfellow, Section 28-15-16.

White and others are drilling in rock at 2,277 feet in No. 5 Watts, Section 30-15-16; Whittiken and others set 10-inch casing at 60 feet in No. 4 Anderson, Section 23-15-16 and tested dry at 2,313 feet in No. 1 Shirey-Berg, Section 29-15-16 and arranging to drill deeper.

Cotton Valley District.

The extension of the Cotton Valley Field 1½ miles southeast by the completion of a big gas well and the fact that it checks as high or higher than any other well in this district, will probably encourage drilling activity in this direction and the well will be watched closely for its possible development into an oil well, imitating the performance of many of the wells in this territory. The big gasser was completed by the Ohio Oil Co. on the Crichton lease in Section 21-21-10, and its production will be used for fuel for drilling operations by that company.

Belchic & Laskey's test on the Logan lease in Section 2-21-10 is being noted with interest, as the formation is checking more favorably than expected, and it may upset the calculations of the geologists and extend production a mile farther north. The well is north of the salt water wells, which it was believed marked the northern boundary of the pool.

The Fortuna Oil Co. has 1,800 feet of oil in the hole in No. 2 L. Merritt, Section 14-21-10, and is building standard rig to pump at 2,545 feet. In the same section No. 3 L. Merritt is drilling in gumb at 1,680 feet and No. 2 S. J. Merritt at 1,410 feet.

The Gulf Refining Co. tested dry at 2,542 feet in No. 2 A. J. Hodges, Section 11-21-10, drilled five feet deeper and is arranging to retest.

The Humble Oil & Refining Co. is drilling in gumbo at 2,450 feet in No. 3 Babb and set 6-inch casing at 2,510 feet in No. 4, Section 14-21-10; has a fishing job at 2,088 feet in No. 3 A. J. Hodges, Section 11-21-10; set 6-inch casing at 2,505 feet in No. 1 Merritt; drilling in gumbo at 2,440 feet in No. 2, Section 14-21-10, and drilling at 2,440 feet in No. 2 Merritt, Section 14-21-10.

The Invincible Oil Co. is drilling in shale at 860 feet in No. 1 Crichton, an offset to the Ohio Oil Co.'s big gasser, Section 21-21-10; two wells on the A. J. Hodges lease, Section 11-21-10, and No. 3 Merritt, Section 14-21-10, are arranging to blow with air; No. 4 Merritt, Section 14-21-10, set 6-inch casing at 2,507 feet and No. 1 Lindsay, Section 22-21-10, set 12½-inch at 207 feet.

Moffatt & Murphy started a test on the Pardee lease in Section 24-21-10, 1½ miles southeast of production, which will be an interesting test in this direction. The test is on the Lindsay lease and 15½-inch casing has been set at 207 feet.

The Ohio Oil Co. made a location for No. 1 Lindsay in Section 22-21-10, near the big gas well, and in the same section the Standard Oil Co. is drilling in gumbo at 2,445 feet in No. 1 McInnis.

The Woodley Petroleum Co. set 6-inch at 2,517 feet in No. 1 Merritt and 10-inch at 460 feet in No. 3, Section 14-21-10.

Morefield & Tanner are drilling at 2,100 feet in No. 1 Pine Wood Lumber Co., Section 2-22-11, 8 miles northwest of the Cotton Valley Pool, and adjoining the old Lloyd Harris well in the north end of Bossier Parish.

Bellevue Field, Bossier Parish

Salt water conditions in the Bellevue Field are making the expense of drilling and operating wells in this territory almost prohibitive. Production is obtained at a depth of around 350 feet and as long as the wells could be pumped with jacks, the expense of drilling and operating was very small, but since it is becoming necessary to install standard rigs for pumping, drilling activity has been reduced to a minimum.

Bliss & Weatherbee are drilling at 300 feet in Bliss & Weatherbee F-1, Section 23-19-11, and the Humble Oil & Refining Co. at 320 feet in No. 27 Bliss & Weatherbee, Section 15-19-11.

Caddo Parish

In the Pine Island district, the Dixie Oil Co. set 4½-inch casing at 1,900 feet in No. 8 Caddo Mineral Land Co., Section 23-21-15; drilling plug in 4½-inch at 2,687 feet in No. 14 Robertshaw, drilling at 3,090 feet in No. 43 Robertshaw, Section 31-21-15, and rigging up to drill No. 62 Robertshaw, in Section 14-21-15.

The Caddo Western Oil Co. is drilling at 2,865 feet in an interesting wild-cat test on the Gardner lease in Section 2-16-15, 7 miles west of Reisor and 8 miles northeast of Bethany.

Collins and others are drilling at 2,060 feet in No. 1 Levy Realty & Planting Co., Section 23-19-24, 8 miles south of Shreveport and half way between the Bethany and Elm Grove gas districts.

In the Mooringsport district, the Gulf Refining Co. is drilling at 2,685 feet in No. 216, Section 14-20-16, and at 1,675 feet in No. 218, Section 22-20-16.

In the Rodessa district, in the northwest corner of Caddo Parish, the Louisiana Texas Community Oil Co. tested dry, with little salt water, at 2,897 feet in No. 1 Rodessa Oil & Land Co. and is temporarily shut down.

In the Hosston district, the Lewis Oil Corp, is drilling in rock at 150 feet in No. 4 Caddo Mineral Land Co., Section 24-22-15.

The Reynolds Oil & Gas Co. tested salt water in No. 4 Jeems Bayou Hunting & Fishing Club and the well has been temporarily abandoned at 2,200 feet.

Claiborne Parish

The Dixie Oil Co. is drilling in shale at 2,805 feet in No. 1 Eastep, Section 20-20-7, 6 miles southwest of Homer.

The El Dorado Chief Oil Co. is drilling in shale at 3,505 feet in No. 1 Grandy, Section 36-22-7, 8 miles southeast of Haynesville.

Pomeroy and others are moving in rig to begin drilling No. 1 Harmon, Section 34-20-6, 8 miles southeast of Homer.

The Standard Oil Co. is drilling in hard shale at 2,585 feet in No. 1 Loyd, Section 10-20-5, 10 miles southeast of Homer.

The Triangle Drilling Co. is drilling in shale at 2,590 feet in No. 1 Ferguson, Section 5-21-5, 10 miles northeast of Homer.

Bossier Parish

The Atlantic Oil Producing Co.'s test on the Bodcau Lumber Co. lease, in Section 24-23-12, is standing full of fluid at 2,716 feet, 25 per cent oil and 75 per cent salt water. The well is in the north end of the parish, not far from the Estes well, which is also making a little oil.

(Continued on Page 92)

Kansas Oil Field News

By C. D. Lockwood

Three wells were added to the Rainbow Bend Pool in western Cowley County during the past week and a fourth was on top of the sand ready to drill in. The Waite Phillips Co., Marland Refining Co. and Independent Oil & Gas Co.'s No. 2 Wertman, SE cor. NW, Section 20-33-3, a diagonal northwest offset to the discovery well, made 403 bbls. in the first 13½ hours from sand at 3,188-3,216 feet; No. 3 Wertman, a location west, produced 280 bbls. in the first nine hours from sand at 3,215-42 feet, and No. 3 Glasgow, NW cor. NE SW, same section, was good for 341 bbls. in the first 12 hours. The same companies' No. 3 Johnson, a location south of the discovery well, was pulling big pipe at 3,090 feet, on top of the sand, and was to be drilled immediately. After eight months of remarkably steady production, the original well in the NW cor. SE, of Section 20-33-3, was still good for 298 bbls. daily. The four wells in the pool before these last three came in were averaging around 2,100 bbls. daily.

A decline in the number of wells drilling in Kansas shows the trend of curtailment that has gradually made itself felt among producers in the State. On July 12, there were 175 drilling wells, compared with 187 for the previous week. There were also only 7 completions reported against 14 the week before. Location, rigs and shutdown wells remained practically the same, with 36, 65 and 83, respectively.

Interest in the area recently opened up by the Red Bank Oil Co. west of Independence in Montgomery County continues to grow and rock hounds and lease men are swarming over that territory as promiscuously now as they did over the western areas some time back. A new machine was moved out during the week to a location a quarter of a mile due south of the discovery well for Connelly & Tucker's No. 1 Megonigle, NW cor. SW NE, Section 33-32-14.

In Saline County, Thralls and others spudded and shut down No. 1, SE cor. NE NW, Section 15-15-4w.

In southern McPherson County, the Wolf Creek Oil & Gas Co. was building a rig for No. 1, NE cor. SE NW, Section 9-21-5w.

Lincoln County

In eastern Lincoln County, G. E. Scott and W. S. Collins were building a rig for No. 1 Stone, SE cor. NE, Section 19-11-6w. In the western part of the county, Berry & Rosenthal were running the 15-inch to 410 feet in No. 1 Lambert, C NW, Section 31-12-10w, with a hole full of water.

In eastern Rice County, Carey & Brown were rigging up for No. 1 West, NE cor. SW, Section 22-19-6w.

In Reno County, about 10 miles south of Hutchinson, Jennings, Sills and others were drilling No. 1 Mohr, C SE SW SW, Section 2-25-6w, at 820 feet.

In eastern Russell County, Ritchie & Moore spudded and shut down No. 1 Dick, SW cor. NE, Section 23-12-11w.

In northern Russell County, Santell &

(Continued on Page 102)

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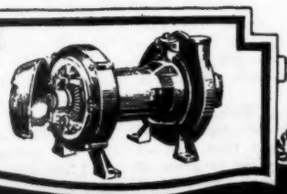

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Wyoming Field Operations

By F. B. Taylor

Rocky Mountain producers bitter against Mid-Continent operators because of failure of shut down movement. Drilling expensive in mountain and desert areas because of long hauls and other handicaps. Wellington and Moffat Fields soon to place crude on market. New Wyoming wildcat planned.

CASPER, Wyo., July 21.—The Rocky Mountain oil producers are blaming the Oklahoma oil men for the present state of the oil market. It is generally reported in oil circles here that the Oklahoma oil fields are to blame for the recent price reductions, because the operators there refused to curtail production and continued their drilling campaign.

Considerable bitterness is noticeable in the attitude of the Rocky Mountain producers and the question is being asked whether it is any use for this region to adopt prorating schemes and like methods at times of overproduction of oil when the other regions flood the market at every opportunity. When Salt Creek and other fields of this part of the country were at their peak and great outputs were possible, the oil men here got together and prorated the runs so that there was no sudden overproduction thrown on the market, but when California started to decline the oil men of that State appeared to engage in a race to see who could get the most production in the least time without any consideration of the effect this procedure might have upon some other part of the country.

With the Wellington and Moffat Fields soon to begin putting crude into the market, the tone of the Rocky Mountain producers seems to be that shortly they will hold a power to either flood the market with oil if the other regions persist in the present attitude, or to hold back this new production until the market is in better shape to handle the output. No direct statement has been made from any of the larger oil companies regarding this move, but it is easy to see how the officials of the companies consider the matter from their conversation and evident bitterness on the way the Mid-Continent fields are doing.

Crude Prices Reduced

The Midwest Refining Co. and the Ohio Oil Co. announced a cut of 25 cents per barrel, effective July 18, on all grades of Wyoming oils. This is going to hit the oil men here rather hard as it is coming at a time when there is a noticeable decline in production in nearly every oil field in this region. Also due to a higher operating cost here than in any other region, crude oil costs more to produce in the Rockies than elsewhere. In other regions, railroad facilities are within short hauls of the fields while the natural advantages that are lacking in the Rockies, are at hand in other places. In Wyoming most of the oil fields are located in desert regions far from a rail point and where even the water has to be piped many miles. In the Salt Creek Field, the Midwest has a pipe line 50 miles long from Casper and these fields are in an arid region where all material has to be shipped in from the forests on the Pacific Coast or from the eastern mills at great expense. Reliable workers are hard to get that will stay on the job for the waste spaces of sage brush and sand pall quickly and homesickness out here is a recognized disease that must be reckoned with. Back in the eastern fields and in the Mid-Continent, the workers relate tales of living in tents and shacks of the rudest nature while putting down wells, yet in this region the companies are obliged to build regular houses and small towns and feed the workers on the best foodstuffs available, brought in from California and elsewhere, if the men are to stay contented. Salt Creek today is considered a wonder field, but its greatness is hardly realized until the observer considers that everything in the field was laboriously hauled 50 miles across the desert and in the great forest of derricks that has grown up in the past five years there, nothing was derived in the construction from the Salt Creek area itself.

As the situation is at Salt Creek, so is nearly every other oil field in the Rockies. The new Moffat Field at Craig, Colo. is going to have hard sledding on account of the rail service. To the outsider, the matter of rail transport to this field seems a small matter because the railroad goes within about 16 miles of the fields, yet the grades are so heavy that the big Mallet locomotives can only haul 24 cars with three engines to a train and sometimes only four cars at a time can be hauled by the ordinary engines. In the winter months the roads are blocked with snow necessitating heavy stocks of fuel and foodstuffs at the oil camps and a consequent heavy drain on the oil operator.

In Former Days

When Salt Creek was first wildcatted, the day of the auto truck had not appeared and the old timers relate tales of how they shot antelope and jack rabbits where the derricks now stand. Often the driller would shut down the engine to shoot a prairie chicken for dinner when it would mean the only food the crew might have for that meal. The desert areas were thickly populated with rattlers and bull snakes, and for that matter, still are. It was customary to patrol the tents every evening to rid the place of these unwelcome visitors that liked the beds of the humans for their own use. In those days the crude was hauled on wagons to Casper where a small refinery, the nucleus of the present refinery of the Standard of Indiana, refined the oil and sold it mainly to the Chicago & Northwestern Railroad for lubricating the rolling stock. As late as 1918 the string teams were a common sight on the trails to the oil fields of this region, but now they have practically disappeared.

The Consolidated Royalty Oil Co. recently sent out notices from the Casper office of the firm that the regular quarterly dividend of 4 per cent would be paid in the near future. This makes the twenty-seventh consecutive dividend the Consolidated Royalty has paid and this record has been equalled by no other oil firm in Wyoming.

The Hamilton Salt Creek Oil Co., drilling on the Craig Dome in the Moffat Field in Colorado, has secured 100 acres of the Hazlett Government permit in Section 29-5-91.

With the well on the Wellington and Fort Collins structures at depths that may prove productive any time, the oil men are watching keenly the progress of the drilling and the companies have taken precautions to keep out crowds that might be a source of danger in case a well is brought in. Fences have been put up around the wells and guards stationed to warn off trespassers.

A report from Fort Collins states that a sample of shale oil from one of the wells shows some phenol, a coal tar product and the uninitiated were somewhat excited over the rumor for a time. It is possible that phenol might occur in petroleum, especially in shale oil, but it could hardly be extracted from oil to compete commercially with the coal tar product.

Plan New Wildcat

The Midwest is preparing to drill a test on the Jordan ranch on what is termed the Iron Mountain Dome about 30 miles north of Cheyenne, Wyo. This well will be a good example of what can be done by geologists looking for structure that are covered up by later deposits. In this structure, after the dome was formed, the Tertiary period shales and layers of gravel were laid down so as to hide all but a small part of the original structure. This small outcrop of Cretaceous led to further examination by the Midwest geologists and then a shallow drilling machine was moved in and drilled four holes at different points in order to give the geologists an idea of what lay under the Tertiary covering.

The results were satisfactory and the Midwest is now moving in a rotary drilling rig and tools to put down a deep hole to the Cretaceous sands. The well is expected to be drilled at least 4,000 feet and will make a test of the Dakota if no commercial production is found above.

The Midwest well on the North Casper Creek structure about 30 miles northwest of Casper, dropped a string of pipe at 1,500 feet and has a fishing job at present. The Mutual Oil Co. has sidetracked the 20-inch bit in the wildcat on the Wallace Creek Dome south of Waltman, Wyo., and is drilling again.

The E. T. Williams Oil Co. brought in a shale producer good for 60 bbls. on Section 22-40-79 in the Salt Creek Field and the Kinney Coastal Oil Co. is starting a new well on Section 19-39-78, where the firm has six producers at present. The Kinney Coastal is down to 2,200 feet on the Kinney Coastal Dome in Fremont County, about 50 miles north of Riverton, Wyo.

The Platte Valley Syndicate, drilling a wildcat well about 7 miles south of Guernsey, in Platte County, Wyoming, is setting 12½-inch casing at 1,800 feet and cementing to hold back surface water. This well is in a region that has had very few wells drilled in the past.

In the Sunburst Field in Montana, the Shoshone Oil Co. on Section 4-35-2 found a gusher well in the Ellis sand that is making around 2,000 bbls. daily. This well is also in the south end of the field where the Van Meer well came in a few weeks ago with big production.

The Ohio Oil Co. brought in a good producer on the Maughan lease on the west side of the field that is estimated at 75 bbls. and the Sunburst Oil & Refining Co. drilled in a producer estimated at 1,500 bbls. on Section 4-35-2.

Salt Creek	94,425
Teapot	2,740
Big Muddy	4,000
Grass Creek	8,300
Elk Basin	1,165
Greybull	31
Byron	215
Rock River	3,000
Lance Creek	3,325
Poison Spider	1,011
Osage	425
Hamilton Dome	170
Mule Creek	1,600
Lander	340
Pilot Butte	75
Lost Soldier	6,650
Ferris	150
Cat Creek	4,000
Sunburst	4,350
Miscellaneous	400
Total	130,551

The Associated Oil Co. of California, which has operated in the Rocky Mountain fields and particularly in Wyoming for the past six years, has definitely abandoned this region and is moving all its equipment and material to California, where the company has extensive productive holdings. The Associated failed to obtain anything commercial in the Rocky Mountain region and has only a long list of dry holes to show for its venture. The company's main operations here were in the Baxter Basin, Red Desert and Rock River areas.

The Producers & Refiners has announced to the citizens of Rock Springs that gas will be available for use in the city by September 1. The line is now being laid from the Baxter Basin Field to the city and distribution mains will be laid in August.

New Leasing Plan in Colorado

The Union Oil Co. of California is trying a new leasing plan in the vicinity of the Wellington structure in Colorado. This plan calls for a lease on all the lands held by the company and signed jointly by all the different landholders. Each party is protected on his holdings, yet such a lease is expected to do away with all offset wells and thereby work out economically for both the producer and the land holder. The new lease is also expected to regulate the production of the wells so that the ultimate output will be greater than were the wells opened up and drilled as close together as has been the usage.

The Union Pacific Railroad is heavily interested in the lands on the Wellington Dome and this road is a convert to the new lease system. The points covering the lease are being explained to other land holders of the area and the Union Oil Co. hopes to have this community lease in effect before any attempt at production is made. In this way it will be possible to save much more than the usual four-fifths lost through penetration of the oil content of the sand into dry areas that hold gas when a field is first opened. The Union Oil Co. agrees that in case the lease is accepted by the community, that the oil company will start one well drilling on each 1,900 acres of land covered by lease and will continue drilling wells until the wells reach an average of one well to each 40 acres. This would mean about 75 wells drilled on the Wellington Dome where the big gasser is located. The income or royalty is computed on a unit basis so that every lease holder will share in the wells drilled according to the amount of land he holds.

The Union Oil Co. states that if the plan goes through, it will mean the life of the Wellington Field will be lengthened many years with much more ultimate income derived therefrom than would otherwise be possible, while if the land holders prefer to go ahead on the strength of the leases now in force, the company has no other way to drill as many wells in as short a time as can be had and produce at the maximum until the wells are exhausted.

Similar to Salt Creek

The method outlined by the Union Oil Co. marks a decided change in oil field production methods. Up to the present, the oil companies have endeavored to produce the crude in the quickest way possible and have accepted a heavy loss through inefficient methods as a part of the tax expected with the business. The Midwest Refining Co. has worked out a similar plan in the Salt Creek Field by which the holding companies in the central part of the Salt Creek Field have pooled their holdings and thereby eliminated much offset drilling and subsequent loss of oil through close spacing of the

(Continued on Page 92)

Remember back in 1894

When the newly discovered Los Angeles field had gotten under way and wells were springing up like mushrooms in the wilderness that is now the Westlake District?

A big stretch of time to tax your memory with, yet many an old-time gas and oil man likes to recall those stirring days.

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Gulf Coast Oil Operations

By P. L. McGreal

Completion in Vinton Pool at shallow depth of 1,170 feet makes 1,000 bbls. Usual producing depth from 1,800 to 2,600 feet. Reduction of 50 cents a barrel in crude prices attracts attention. Production remains about the same with Luling averaging 48,086 bbls. daily.

HOUSTON, Tex., July 21. — The development of a 1,000-bbl. well in the Vinton Pool at 1,170 feet, a new producing horizon and another cut of 25 cents in the credit balance quotation for Grade "A" and 15 cents for Grade "B" were the features of the week in the Gulf Coast pools. Grade A. is now $1.50 and B at $1.30. The first announcement was made Friday by the Humble Oil & Refining Co., the other lines following.

Two deep sand tests were abandoned on the Caldwell County side of the San Marcos River in the Luling Field by the United North and South Oil Co. That company evidently has no fears of price cuts, as it announces an active drilling campaign in both Caldwell and Guadalupe Counties.

More wells were completed in the Coastal Pools during the week than has been the case for months, but it is noted that very little new work is starting. The major companies are withdrawing rotary rigs and putting them into storage as fast as wells are completed and the rigs are released. Contractors also find themselves with a surplus of rigs on hand and many of them are going out into the new developments in the West Texas counties in search of work.

Naturally a cut of 50 cents for Grade "A," Gulf Coast crude, within 10 days has caused much criticism, coming from independent producers, who say they have been curtailing operations in obedience to the desires of the pipe line companies. They assert they had been led to believe that production was well within consumption requirements, if not actually below the demands of the market for this heavy gravity crude. The production of Grades A and B are about on a parity, or 50-50 basis, with Grade A in demand for the manufacture of lubricating stocks, because of its freedom from sulphur content, gravity requirements and complying in other respects with the rules of the pipe line companies. The gross stocks, the independents claim, are not excessive. On the other hand, buyers say they cannot dispose of the crude in sufficient quantities, either to Coastal refineries or those on the Atlantic Seaboard and give specific instances of where standing orders for this grade of crude have either been cut or cancelled by refiners.

Much Misunderstanding

As a matter of fact there is much misinformation and a false understanding of the position of Gulf Coast crude and its value. Naturally, the producer thinks it is the best crude in the world for lubricating stocks because of its natural zero cold test. Every producer in the country has the same opinion of the crude in his particular field. He compares it with other crudes and contends it has a greater gasoline content, or greater lubricating content than any other crude. From the discovery of the Spindletop Pool down to 1914 the Coastal product was classed as a fuel oil. Its value ranged from as low as 3 cents per barrel in the days of the Spindletop boom, the prevailing price during the flush days being 10 cents. Contracts between producers and pipe lines ranged between 40 and 60 cents for several years, eventually reaching 80 cents.

The Oil and Gas Journal and the Oil City Derrick published the first analysis of Gulf Coast crude in the October 9, 1914, issues of both publications, showing the refinable qualities of the crude made from samples of Humble, Sour Lake and Saratoga pools. These laboratory runs showed its high lubricating content, although low in gasoline and the other light contents. The publication of the analysis lifted the crude out of the fuel oil classification and helped create a demand for it from northern refiners. Incidentally, a number of these refineries now have big plants located in the Gulf region of South Texas.

Summed up in brief, the situation concerning Coastal crudes is this: There is a greater demand for lubricating stocks made up from this grade in the winter months than during the summer months, especially in the northern markets. Every crude has a greater or less percentage of lubricating content, creating a competition which the Coastal producer and refiner must meet. To revert it back to fuel oil uses, means it must meet the competition from the low gravity California, Arkansas and Mexican crudes. The general business depression in the various manufacturing lines also plays its part in a lessened demand for both fuel and lubricating oils.

Production About Same

Completions during the week in the Coastal pools number 38, of which 13 were worked over holes. The new production totals 7,467 bbls., the Hull Pool contributing 1,705 bbls., Orange 3,025 bbls. and Vinton (La.) 1,380 bbls. The dry holes number five, with three salt water wells. At the close of this review 14 wells are bailing. In the Southwest fields, wells completed number seven, with 1,865 bbls. new output and two failures, both being deep tests in the Luling Field. Two wells are bailing.

The estimated gross daily average production for the week is placed at 79,795 bbls., an increase of 400 bbls. over the estimate for last week. The estimate for the Southwest fields is placed at 55,976 bbls., Luling being credited with 48,086 bbls.

The estimate for each district is as follows:

District—	Gross Bbls.
Batson	1,695
Blue Ridge	735
Barber Hill	180
Dayton	95
Damon Mound	1,470
Edgerly (La.)	560
Goose Creek	11,550
Humble	6,820
Hull	20,700
Jennings (La.)	510
Markham	350
Orange	9,650
Pierce Junction	350
Spindletop	990
Saratoga	1,480
Sour Lake	4,460
Vinton (La.)	5,710
Welsh and Anse La Bute (La.)	85
West Columbia	11,500
Miscellaneous	915
Total	79,795
Southwest Fields—	
Luling	48,086
Laredo districts	4,190
Somerset	2,480
Callham	675
Rockdale-Minerva	545
Total	55,976
Total both areas	135,771
Increase	764

Completions and Operations

Both the Vinton and Batson Pools staged surprises last week. In the first named, the Vinton Petroleum Co.'s No.1 Rescue is flowing 1,000 bbls. of pipe line Grade A oil at 1,170 feet. The production in that district comes from sands from 1,800 to 2,600 feet. The new well is in a section of the pool where many dry holes have been drilled in the past. In contrast with the shallow sand wells is the Just Oil & Refining Co.'s No. 2 Lyons, bailing at 4,050 feet in another part of the pool. The Vinton Petroleum Co.'s No. 47 Gray is making 100 bbls. at 2,360 feet. The Seiss Syndicate's No. 8 Green is flowing 200 bbls. at 2,450 feet. The Gulf Coast Oil Co.'s No. 13 Vincent is pumping 75 bbls. at 2,525 feet and Wilson & Tucker's No. 3 Parks five bbls. at 2,475 feet. The Sun Oil Co.'s No. 2 Johnson bailed salt water at 2,880 feet. The Gulf Refining Co.'s No. 33 G. N. G. is bailing at 2,400 feet.

The Gulf Co.'s No. 32 Star is drilling at 2,220 feet and No. 50 G. N. G. is shut down. No. 2 F. H. Gray is at1,690 feet. The Texas Co.'s No. 25 Gray is at 2,120 feet. The Just Oil & Refining Co.'s No. 1 Weeks is idle. The Vinton Petroleum Co. has a derrick up for No. 3 Rescue 13 acres, and is rigging No. 48 Gray. Wilson & Tucker's No. 2 Parks is rigging to work over.

The Kirby Petroleum Co.'s No. 2 Hodges came in during the middle of the week in the Batson Pool, flowing 3,000 bbls. of fluid, 50 per cent oil, showing 38 gravity, at 3,082 feet. It is sanding and at the close of the week was down to 125 bbls. It is in the northwest part of the pool and is the second deep test drilled there by the same company. No. 1 Hodges came in flowing at the rate of 5,000 bbls., "high-powered" crude, as it is called when unusually high-gravity oil is found in the Coastal region. Screen was set at 3,270 feet, or nearly 200 feet deeper than in No. 2. The well sanded and was finally abandoned after vainly trying to restore production. No. 2 is located 300 feet southeast from No. 1. "High-powered" gravity wells seldom last long in the Coastal region. The East Batson Oil Co.'s No. 6 Allen is pumping 20 bbls. at 1,100 feet and the Duetser Oil Co.'s No. 8 Trustee is bailing at 775 feet.

The Gulf Production Co.'s No. 160 Wing there is drilling at 1,410 feet and S. R. Buchanan's No. 77 Milhome is around 1,500 feet. The Sun Oil Co.'s No. 73 Paraffine is around 600 feet. The Ada Belle Oil Co. is starting No. 77 Milhome and Campbell & Borsems have a rig in for No. 2 Hooks.

Orange Completions

Late in the week the Rycade Petroleum Co.'s No. 5-E in Cow Bayou, in the Orange Pool, came in at 4,568 feet, flowing 2,700 bbls., showing 20 per cent water. Forty feet of 4½-inch strainer was set. The well is without any special significance with regard to location. The same company is testing out No. 4 Kishi on the beam at 3,066 feet. The Gulf Production Co.'s No. 7 Peveto is flowing 200 bbls. by heads at 4,580 feet. The Sinclair Oil & Gas Co.'s No. 2 Granger, a work-over, is pumping 10 bbls at 3,325 feet and the Orange Petroleum Co.'s No. 7 Chesson, also a work-over, 65 bbls. at 3,560 feet, 20 per cent water. The Humble Oil & Refining Co.'s No. 10 Winifree is going on the jack at 2,850 feet. The Brownie Babbitee Oil Co.'s No. 2 Brown, worked over last week, is now flowing 300 bbls. at 4,700 feet, 20 per cent sediment and water.

On the south and southeast sides of the pool, the Gulf Production Co.'s No. 1 Hammam-Consolidated is pumping mud into the hole after a gas blowout last week at 4,000 feet. Its No. 16 Hagerfee is drilling at 3,600 feet. No. 11 Hager-Moore is at 3,655 feet and No. 5-A Winifree at 3,670 feet. The Sun Oil Co.'s No. 5 Gunstream is setting casing at 3,410 feet. The same company's No. 1 Kato on the northeast edge of the pool is drilling below 5,025 feet, the deepest test in the district and one of the deepest holes ever drilled there. Out nearly 1 mile from production in that direction, the American National Oil Co.'s No. 1 Winifree is reaming to set casing and test around 4,670 feet. It is the only semi-wildcat drilling near the production in the pool.

In other parts of the pool, the Orange Petroleum Co.'s No. 1 Berwick is bailing at 3,325 feet, after being deepened. The Mutual Oil Co.'s No. 2 Chesson is setting casing at 3,370 feet and drilling No. 3 at 4,270 feet. Both are being worked over. No. 13 is drilling at 3,900 feet.

The Atlantic Oil Producing Co.'s No. 3 Hager is drilling around 3,345 feet and the Edgerly Petroleum Co.'s No. 2 Carbello at 4,333 feet. The Rycade Petroleum Co.'s No. 2-E State land is below 4,710 feet and No. 4 is deepening below 4,650 feet. Brownie Babbittee Oil Co.'s No. 9 McLean is at 3,415 feet.

Hardin County Pools

In the Sour Lake Pool, the Lake View Oil Co.'s No. 38 Hardin is flowing 100 bbls. by heads at 1,750 feet and the Gulf Production Co.'s No. 54 Hardin-Tarver is pumping 50 bbls at 1,900 feet. The Two-Acre Oil Co.'s No. 1 Dornak is bailing at 1,600 feet.

The Humble Oil & Refining Co.'s No. 38 Hardin is drilling at 1,970 feet and The Texas Co.'s No. 288 fee working over at 1,980 feet.

In the Saratoga Pool, the Rio Bravo Oil Co.'s No. 210-B is pumping 40 bbls. at 875 feet and the Weldon Oil Co.'s No. 5 Brice is a 12-bbl. producer at 1,100 feet. The Paggi Bros.' Oil Co.'s No. 42 Queen City is bailing at 1,370 feet.

The Rio Bravo Oil Co.'s No. 2-P was drilled to 2,980 feet and went into a cap rock formation. It is being plugged back to 1,900 feet for a test at that level. The Gulf Production Co.'s No. 22 BBBC is drilling at 975 feet and the Sun Oil Co.'s No. 170 fee at 375 feet.

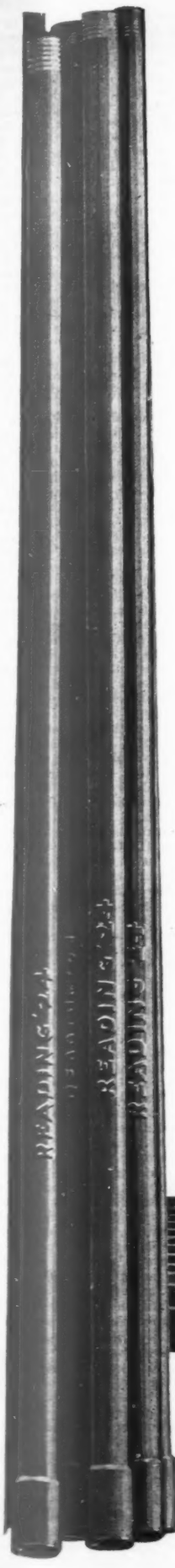
Liberty County Pools

The best well in the Hull Pool was the Houston Production Co.'s No. 8 Barngrover on the south side, flowing 850 bbls. at 2,750 feet. The Yount-Lee Oil Co.'s No. 4 Merchant on the north side is pumping 350 bbls. at 3,225 feet and No. 5 Merchant is being connected up to go on the jack at 3,675 feet. W. B. Flynn's No. 4 Ray is making 30 bbls. at 2,200 feet. The Gulf Production Co.'s No. 36 Phoenix is flowing 400 bbls. by heads at 3,400 feet and No. 23 is bailing at 2,300 feet. Both are workovers. No. 80 Harrison im pumping 25 bbls. at 2,100 feet. The Republic Production-Houston Oil Co.'s No. 86 Dolbear is a 40-bbl. well at 1,800 feet. The Humble Oil & Refining Co. got salt water in No. 11 Hankmer at 1,975 feet. The Gulf Co. abandoned No. 14 Hannah fee located 1,500 feet west from production, at 4,450 feet.

On the northwest side of the dome the Mecom Oil Co.'s No. 4 is deepening at around 3,760 feet and No. 6 is drilling at 2,365 feet. The Yount-Lee Oil Co. has a derrick up for No. 10 Merchant and the Humble Oil & Refining Co. one for No. 3 Merchant. On the north side the Gulf Production Co.'s No. 13 Scarborough is rigging to drill in. It will be an electrically drilled well. The same company is rigging No. 12 Morris-Phillips on the northeast. On the east side the Republic Production-Houston Oil Co.'s joint No. 20 Dolbear is rigging to work over and No. 70 is sidetracking at 1,875 feet. No. 88 is drilling in at 2,000 feet.

Around to the southeast the Gulf Co.'s No. 29 Phoenix is deepening at

(Continued on Page 107)



Double Drift Test

—*An Exclusive Reading Feature*

TO the best of our knowledge, the Reading Iron Company is the only pipe manufacturer employing the Double Drift Test on its Tubing.

Not only does *Reading Tubing* receive a short drift before it is cut and threaded but has passed through it a 42" mandrel, an assurance of straight tubing. The result means freedom to the passage of plungers, sucker rod sockets, etc. For example, operators are having trouble in running 24" sucker rod sockets, full 1⅞" diameter, through 2" tubing. *Reading Tubing*, of genuine wrought iron, is an insurance against such difficulties.

Not only is *Reading Genuine Wrought Iron Tubing* superior to Steel but *Reading Tubing* surpasses tubing of any other manufacture in finish and workmanship.

READING IRON COMPANY
Reading, Penna.

OIL WELL SUPPLY CO., Distributors
Stores in all Important Oil Fields

992

READING PIPE

GENUINE WROUGHT IRON

Pennsylvania-West Virginia

By D. S. Wakenight

E. H. Everett Co.'s second test on Montgomery farm, Hanover Township, Licking County, Ohio, best completion in months, 200 bbls. Premier Window Glass Co. has promising producer in Clay district, Ritchie County, W. Va. Marshall County assuming lead in development. Ritchie County losing.

PITTSBURGH, Pa., July 20.—The week of development work in the Eastern fields proved disappointing, both in the number of wells completed and the amount of new production. The week had the distinction of completing fewer wells than for any one week since the first of the year. But three of the completions are what might be called fair producers. The best of the three is the E. H. Everett Co.'s second test on the Felix Montgomery farm, located in Hanover Township, Licking County, Ohio. The first 24 hours after drilled through the Clinton sand and shot it produced 200 bbls. The location is 800 feet north of the first test on this farm. The well is credited with the highest initial production of any completed in many months in the eastern fields. All the other wells completed in deep or shallow sand territory in southeastern Ohio came in light pumpers or dry holes. In Lot 14, Madison Township, Spindler & Donalson's test on the Norris E. Irwin farm is a 2 or 3-bbls. pumper in the Berea grit. In Lot 2, Franklin Township, Ralph Brothers have a very light pumper in the same formation at a test on the J. M. Stevens farm. In lot 10, Franklin Township, W. W. & A. T. Wehrle got a 3-bbl. pumper in the Berea grit at a second test on the James Taylor farm. In the same township, the Detex Oil & Gas Co. completed No. 3 on the G. E. Comerman farm. It is very light in the Berea grit. The Rushville Oil & Gas Co.'s second test on the Francis Holliday farm, in Section 2, Rush Creek Township, Fairfield County, is a gasser good for 500,000 feet. In Aurelius Township, Washington County, Section 2, Harry Cooper & Co. have a show for a 4-bbl. pumper in the Berea grit at No. 3 on the H. Schuman farm. In Section 2, Harrison Townsihp, Muskingum County, Nash Keller & Co. have a 5-bbl. pumper at No. 3 on the Boyce heirs' farm. In Section 7, Liberty Township, Washington County, the Carter Oil Co. completed into the 800-foot sand No. 7 on the S. Archer farm. It is a good gasser in this formation.

Nest of Dusters in Monroe County

In Section 11, Washington Township, Monroe County, Harry Binegar & Co. have a dry hole in the Berea grit at a test on the Esau Knowlton farm. In Section 12, same township, the Simmons Oil Co.'s No. 5 on the J. F. Weckbacher farm is dry in the first Cow Run sand. In Section 26, Bethel Township, the same company has a duster in the Berea grit at a test on the John A. West farm. In Section 25, in the same township, the Simmons Oil Co. completed a duster in the Berea grit at a test on the Robert G. Conner farm.

In Section 26, Olive Township, Noble County, E. C. Merry & Co.'s test on the Fred Haynes farm is a very light gasser in the Berea grit. This location is 1,000 feet south of developments. In Section 18, Sharon Township, Charles Nott and others completed a test on the H. W. Boyd farm, located 2,000 feet south of the test on the Mary A. Keyser farm and dry in the 700-foot sand.

In Liberty Township, Washington County, James Hadley & Co. started to drill a second test on the James Hadley farm. In Section 21, Jackson Township, Knox County, the Ohio Fuel Supply Co. started to drill on the C. G. Davidson farm. In the same township, the Arkansas Fuel Oil Co. is drilling on the L. V. Dugan farm. In Hanover Township, Licking County, the Edward H. Everett Co. is going to try for a producer in the Trenton rock by drilling down from the Clinton sand its second test on the P. M. Brill farm. This is the fourth well to be started to drill to the Trenton within the past month. The other three are in the vicinity of Newark, owned by the Pure Oil Co., Ohio Fuel Supply Co., and W. W. & A. T. Wehrle. These wells will be watched with a good deal of interest when they reach the Trenton. The initial well drilled down to the lower formation is reported holding up at 30 bbls. a day. By some it is claimed that it would make a larger producer if drilled deeper into the Trenton rock. Its total reported depth is given at 4,437 feet.

On the south side of Newark City, Newark Township, W. W. & A. T. Wehrle are drilling a test on the Mayme Gorman farm. In Section 33, Pleasant Township, Perry County, the Allegheny Oil Co. is drilling on the James Donaldson farm. In Franklin Township, Licking County, W. W. & A. T. Wehrle are drilling on the J. T. Watson farm, and in Licking Township, the same parties are drilling on the Charles Ice farm. In Reading Township, Perry County, the A. H. Heisey Co. started to drill to the Clinton sand on the Samuel Hoover farm, one-half mile southwest of the Ohio Fuel Supply Co.'s test on the D. W. Baker farm. In Section 19, Liberty Township, Washington County, Beeson Bailey & Co. started to drill a test on the James R. Heslop farm.

West Virginia

The showing made by the West Virginia fields during the past week was disparaging in the extreme. The Premier Window Glass Co. got what looks like a promising producer when it drilled No. 3 on the Minerva Raymond farm into the Maxon sand, in Clay district, Ritchie County. The well has been connected by the Eureka Pipe Line Co. but the owners have not as yet had a 24 hours' gauge In West Union district, Doddridge County, the Philadelphia Oil Co.'s No. 3 on the Thomas J. Smith farm is holding up at 40 bbls. a day. This well was drilled the previous week. Located 700 feet west of this well, the Hope Construction & Refining Co. drilled its test on the William Smith heirs' farm into the Big Injun sand and not good for more than 10 bbls. a day. In the southwest district, the Pittsburgh & West Virginia Gas Co. has a gasser in the salt sand at a test on the Henry Hess farm. In West Union district, the Hope Construction & Refining Co.'s test on the W. F. Smith farm is a gasser in the Big Injun sand. In McClelland district, J. H. Pence & Co. have a gasser in the same formation at No. 9 on the Underwood farm. In West Union district, the Hope Construction & Refining Co. has a gasser spraying some oil at its No. 7 on the William Smith farm.

Lewis County Gassers

In Freemans Creek district, Lewis County, the Carnegie Natural Gas Co.'s test on the Peter Lohan farm, drilled deeper, is a gasser in the Big Injun sand. In Collins Settlement district, the West Fork Oil & Gas Co. has a gasser in the Gantz sand at a test on the Grace Rhodes farm. In Union district, Harrison County, on Buffalo Run, the Reserve Gas Co. has drilled down to the Speechley sand to a total depth of 3,334 feet, its old well on the Asbury Lewis farm. It is a very light pumper. On Leading creek, Sheridan district, Calhoun County, the Chemical Oil Co.'s second test on the Miller heirs' farm is dry in the Big Injun sand. On Laurel Run, Murphy district, Ritchie County, the Hope Construction & Refining Co. started to drill a test on the C. E. Carnes farm. In Washington district, Jackson County, F. F. McIntosh has a duster in the Berea grit on the E. C. Board farm.

In Simpson district, Harrison County, the Bridgeport Oil & Gas Co. has a Gordon sand gasser at a test on the D. B. Gawthorpe farm. In Otter district, Braxton County, the Pittsburgh & West Virginia Gas Co.'s test on the W. C. & G. B. Stonestreet farm is dry in all sands. In DeKalb district, Gilmer County, Parks & Daily have a duster in the Big Injun sand on the Massalona Westfall farm. Bowers & Ekas' test on the Seldon Rice heirs' farm in Union district, Wood County, is a gasser in the Big Injun sand. In Union district, Ritchie County, the Hope Natural Gas Co.'s test on the S. T. Wright farm is a gasser in the Squaw sand. In Washington district, Calhoun County, F. F. McIntosh, after drilling through the Berea grit has abandoned his test on the E. C. Board farm. In Smithfield district, Roane County, the United Fuel Gas Co. completed a Big Injun sand gasser on the J. E. Hill farm. by deeper drilling the Manufacturers Light & Heat Co. got a gasser in the Gordon sand at a test on the John Hennen farm, located in Clay district, Wetzel County. In Duval district, Lincoln County, Rashman & Staunton have a gasser in the Big Injun sand on the S. M. Pike heirs' farm. In Union district, Marshall County, the Decem Development Co.'s No. 3 on the Campbell heirs' farm is good for 10 bbls. a day in the Big Injun sand.

Drilling and Starting Tests

In the West Virginia and southeastern Ohio there is still some test work under way and starting, but from now on until conditions improve there will be very little doing along that line. Producers will have to keep their old wells pumping. To shut them down would be disastrous in many localities. A shut down of some of the old wells would be equivalent to abandonment for they would never come back if the shut down extended over a number of months. Owners of small wells realize that it is the better part of good judgment to keep them alive, even if there is little or no profit in keeping them going and have production when the market recovers.

Marshall County, West Virginia, has as much or more test work starting as in any other county in the Little Mountain State. In Liberty district, the Manufacturers Light & Heat Co. is rigging up on the M. A. Walton farm, moving tools to a location on the Pipes-Hicks farm and building a rig on the Murtaugh heirs' farm. In the same district, the Blake Oil & Gas Co. is drilling to the lower sands its test on the D. V. Blake farm. In Union district, George P. Wasmuth & Co. started to drill a second test on the John Otte Sons' farm. The Natural Gas Co. of West Virginia is drilling on the J. E. Black farm. The U. S. Stamping Co. has made a location on the J. V. Markey farm. In Cameron district, the Cameron Gas & Electric Co. started to drill on the D. W. McConaughey farm. In New Milton district, Doddridge County, J. E. Trainer started to drill on the Anderson Perrine farm. The Stephens Drilling Co. is down 1,800 feet at a test on the Roscoe McCullough farm, in Meade district, Tyler County. This is 2,500 feet southeast of the company's test on the Bradford farm. In the same district, the Premier Oil & Gas Co. started to drill on the William Birch farm. In Clay district, Monongalia County, on Dolls run, the Hope Construction & Refining Co. started to drill on the William Price heirs' farm. In Mannington district, Marion County, S. N. Elliott has r'g timbers at a location on the L. A. Metz farm.

Doddridge and Harrison

In New Milton district, Doddridge County, Trainer & Travis have the rig completed for a test on the R. E. Kelly farm. In the same district, the Eagle Run Oil Co. is still shut down on the Delbert Adams farm. The Pittsburgh & West Virginia Gas Co. has made a location on the B. F. Gratehouse farm. The Carnegie Natural Gas Co. is due in the Keener sand at a test on the Asa Kelly farm. The Bridgeport Oil & Gas Co. has made the location for a test on the Ira Stout farm, in Union district, Harrison County. In Grant district, the Hope Natural Gas Co. has made a location on the D. L. Nutter farm. In the same district, the Hope Construction & Refining Co. is due in the Gordon sand on the E. H. Stout farm. In Ten-Mile district, C. T. Arnett & Co. have a rig completed on the F. Rodgers farm. In Grant district, the Clarksburg Light & Heat Co. is drilling at 1,600 feet on the John P. Reed farm. In Ten-Mile district, the Hope Natural Gas Co. is still fishing at 1,965 feet on the G. W. Albright farm.

In Courthouse district, Lewis County, the Reno Oil Co. is due in the Gordon sand on the T. J. Lough farm. Horner & Co. have a rig up on the Hyer heirs' farm. Moran & Duncan are starting to drill on the B. W. Duncan farm. In Freeman Creek district, the Reserve Gas Co. is drilling at 2,600 feet on the P. T. Barb farm. It was the original intention of the Reserve company to make a deep test on this well but it decided to change the location to the L. L. Smith farm in Union district, Harrison County, and is now getting rig timbers to the location.

Calhoun County

Calhoun County has more than the usual amount of test work under way and starting. In Center district, the Hope Natural Gas Co. has part of the rig material at a location on the Bennett-Bell farm and a rig building on the Bennett-Bouroughs farm. In Sherman district, the same company is rigging up on the Bennett-Johnson farm and started to drill on the Mary B. Bowie farm. In Sherman district, the Richter Oil Co. started to drill on the Matilda Smith farm. In Center district, Henry Eddy & Co. have rig material at a location on the Ann Dailey farm. In DeKalb district, Gilmer County, the Star Oil & Gas Co. has rig material at a location on the Harriet Gainer farm and Okey Beall & Co. building a rig on the W. A. Simmons farm.

Ritchie County

All through the first half of the current year, Ritchie County led in the amount of new work starting and completed. For several weeks there has been a marked falling off. In Grant district, the Goose Creek Oil & Gas Co. is drilling on the W. S. Newbrough farm. Lucas & Mahoney started to drill on the E. J. Fifer farm. In the same district, Mellon Brothers have a plugged No. 4 on the A. J. Noll farm and are starting a new hole. In Murphy district, Ritchie County, the Hope Natural Gas Co. started to drill on the Matilda Scott farm. In La-

(Continued on Page 100)

How Many Customers Can a Salesman Profitably Handle?

IN the study of economic principles, the ***Law of Diminishing Returns*** is the name usually given to the fact that ***increased*** application of labor and outlay yield ***less*** in proportionate returns after a certain point has been reached.

Translated into the language of sales management, this simply means that the number of prospects a salesman calls on is less important from a profit-making standpoint than the number of customers he can handle intelligently and effectively.

It naturally follows that the logical solution of the sales problem lies in equipping your men with oil merchandise that meets the least sales resistance and can be sold with the least time loss for explanation and adjustments.

PENN AMERICAN

ependable

p ennsylvania

roducts

enable a salesman to cover more ground profitably. Their established reputation for unvarying quality saves much educational work, and their performance makes repeat orders a certainty.

PENN AMERICAN REFINING CO.

Refiners of Pennsylvania Petroleum

Refineries: Oil City and Rouseville, Pa.

Home Office: OIL CITY, PA.

Established 1886

Tips from an Old-Timer

To make a stiff quota on inferior merchandise demands that a salesman be an Ananias in Seven League Boots—an Ananias in order to make ANY sales; the Seven League Boots in order to find ENOUGH ONE-TIME VICTIMS.

MEN KNOWN IN OILDOM

Homer S. Fox

The handling of nonferrous metals in the Department of Commerce has been transferred from the Iron and Steel Commodity Division and has been grouped with the Petroleum Division. Homer Sherman Fox is now acting chief of the Petroleum Division and is successfully working on several important investigations for the information and benefit of the petroleum industry.

Mr. Fox is a highly trained specialist in foreign trade and oil exploitation work and has associated with him others whose experiences practically qualifies them for this work. He was born at Manistique, Mich., December 31, 1893, and was educated in the public schools and in the Michigan Central Normal School. Later he took the course in the School of Business Administration, LaSalle University, and was graduated from the School of Foreign Service, Georgetown University, Washington, D. C.

He was designated assistant chief of the Petroleum Division, Department of Commerce on October 30, 1922, and when Henry C. Morris, head of the division, resigned on December 1, 1923, to devote attention to his private business affairs, Mr. Fox became acting chief of the division. Mr. Morris had brought to his position as chief of the Petroleum Division both technical knowledge and practical expedience in all phases of petroleum activities and he and Mr. Fox were closely associated in the development of the bureau.

PERSONAL PARAGRAPHS

W. J. McKeown of Petrolia, Ont., has left for the Sumatra fields.

* * *

David Holmes of Petrolia, Ont., will leave soon for the Trinidad fields in South America.

* * *

John Buchanan sailed recently for Java after a furlough of three months in Petrolia, Ont.

* * *

Ronald McGregor and John McKeegan have returned to Petrolia, Ont., from the Colombia fields, South America.

* * *

S. J. Caudill, petroleum engineer, has returned to his Tulsa offices after spending several weeks in the Los Angeles office.

* * *

Prof. Hugo von Boeckh, who has been with the Anglo-Persian Oil Company, in Persia, returned recently to his home in Budapest, Hungary, after a short trip to London, England.

Charles Pishney, with the Marland Refining Company, Ponca City, Okla., was a visitor to the company's Tulsa offices recently.

* * *

Matt Collins has returned to Petrolia, Ont., from Colombia, South America, where he has been with the International Petroleum Company.

* * *

W. A. Schleuter, of the Refinery Supply Company, Tulsa, left recently on a motor trip to Eastern points for a visit with friends and relatives.

* * *

L. A. Gensch, formerly purchasing agent for the Derby Oil Company, Wichita, Kans., is now with the Hayes Equipment Company, Wichita, Kans.

* * *

T. J. Cannon, of the Cannon Drilling Company, Long Beach, Cal., left recently for Pennsylvania and other Eastern fields on an extended business trip.

* * *

W. R. Darling, an employe of the Tidal Oil Company, in the Osage district, Oklahoma, is reported recovering from a recent operation for appendicitis.

* * *

George C. Schaffer, manager of the oil field division, Novo Engine Company, Chicago, left Tulsa recently for a business trip through the Rocky Mountain oil areas.

* * *

Lew Frawley, experienced driller, has been secured by the Marland Oil Company of Colorado to scout drilling operations in Colorado and Wyoming for that concern.

* * *

W. L. Connelly, of the Mammoth Oil Company, Casper, Wyo., was called to Cheyenne last week on official business connected with the operation of the company's leases.

* * *

James C. Crawford, of Washington, D. C., formerly with the Producers & Refiners Corporation, in Denver, Colo., was visiting friends in that city and Casper, Wyo., recently.

* * *

Donald McKenzie, well known in British financial circles, was elected a director of the Invincible Oil Corporation, at the recent annual meeting of the directors of the concern.

* * *

Paul N. Boggs, chairman of the board of the Union Tool Company, Los Angeles, Cal., has been enjoying a well-earned vacation, which reports say, is the first he has had in many years.

* * *

R. J. Peterson, formerly with the Petroleum Iron Works at Casper, Wyo., has gone to Houston, Tex., where he will be associated with A. M. Johnson, district manager for the company in that region.

* * *

Bernard H. Lasky, Tulsa gelogist, has gone to Denver, Colo., where he will make his headquarters in the interests of his clients in Colorado and western Kansas acreage. He will retain his office in Tulsa.

* * *

A. M. Sellery, of the land department of the Ohio Oil Company, who has spent considerable time recently in Colorado, New Mexico and Utah, conferred with company officials in Casper during the past week.

* * *

E. B. Reeser, president of the Barnsdall Oil Company, New York City, has been making his headquarters in Tulsa during the past week, while visiting the Mid-Continent properties of the Barnsdall companies.

* * *

Sidney A. Stewart, only son of H. S. "Hank" Stewart, one of the oldest and best known oil operators in the Eastern fields, is recovering at his home in Pittsburgh, Pa., after a severe attack of double pneumonia.

* * *

B. A. Hardy, of the Gulf Refining Company's scouting department at Shreveport, La., a major in the Coast Artillery branch of the Reserve Army Corps, has received orders to report at once to Fort Barrancas, Fla., for further training in the citizens' military training camp. Mr. Hardy left last week with his family and will spend his vacation in camp.

J. K. Helmar, of the Radio Petroleum Company, Fort Worth, Tex., has returned to his desk from a three months absence in Colorado, where he has been convalescing from a severe attack of pneumonia.

* * *

Mr. and Mrs. Fred Saunders and family of Windsor, Ont., have left for Curacao, Dutch West Indies, where Mr. Saunders will be refinery superintendent of the Curacao Oil Company under a three-year contract.

* * *

P. L. Eddy, former superintendent of the Elk Basin Field for the Midwest Refining Company, has been transferred to the Cat Creek Field in Montana. He will be succeeded at Elk Basin by C. L. Keefer formerly of the Midwest in Salt Creek.

* * *

George W. Stage, assistant manager for the Continental Supply Company, and B. F. Kelly, district representative of the Titusville Iron Works, together with their families, have started on an automobile trip from Tulsa to West Virginia, where they will visit relatives.

* * *

H. B. Simcox, for 15 years with The Texas Company, has been appointed general superintendent of the producing properties of the Mutual Oil Company, which includes divisions in the Mid-Continent, along the Gulf Coast, in California and the Rocky Mountains. He will have headquarters in Denver.

* * *

C. H. Shaffer, who for five years has been purchasing agent for the Caddo Central Oil & Refining Company, Shreveport, La., resigned his position, effective July 15. After taking a vacation with his family at Hot Springs, Ark., he will return to Shreveport, to take charge of the Shreveport Brass Works.

* * *

George Horne of Titusville, Pa., a well known oil operator and business man of the Pennsylvania oil regions and W. T. Funk, general manager for the Rocky Mountain division of the Carter Oil Company, are spending a few days in Casper and Salt Creek, Wyo, on a trip through the oil fields of the Rockies.

* * *

H. H. Hill, of the petroleum division, United States Bureau of Mines, Department of the Interior, returned recently to Washington, D. C., after an extended inspection trip throughout the Rocky Mountain region. Mr. Hill was formerly supervisor over this territory and has many friends in Colorado and Wyoming.

* * *

George D. Locke, vice president of the Barnsdall Refining Company, Chicago, with W. W. Rice, assistant sales manager for the same company, Chicago, and M. G. Eitleman, of the Kansas City distributing branch of the Barnsdall Refining Company, were conferring with officials of the Barnsdall Corporation in Tulsa the past week.

* * *

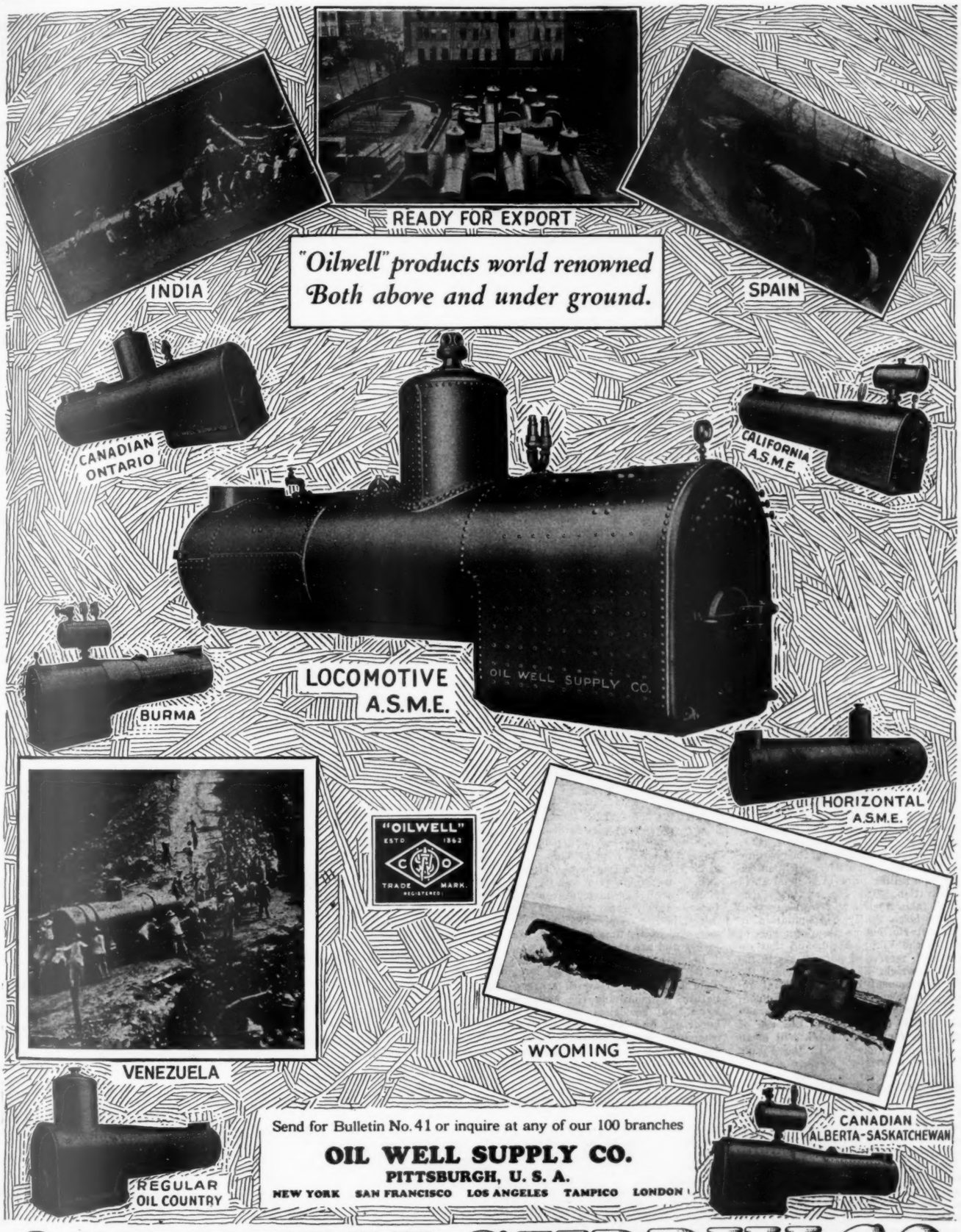
A party of officials of the Nippon Oil Company, headed by S. Nomato, vice president, arrived in Tulsa last week for a visit to the Mid-Continent oil fields. Others in the party included M. Yamaguchi, auditor, M. Yamado, engineer, who with the vice president of the company live in Tokio, Japan, and H. Kishi, American representative.

* * *

"Bob" Matter, who has for some time past been head of the land department of the Shreveport, La., division for the Humble Oil & Refining Company, has been transferred to Houston, Tex., and was given entire charge of the land department of that company. The Shreveport position has been filled by Nat Wilson, of the scouting department.

* * *

Frank McCue, retired assistant superintendent of the South West Pennsylvania Pipe Line Company, was the honor guest at a banquet given by his former associates and old-time friends at the American Legion Hall, Washington, Pa., recently. Mr. McCue had 33 years of continuous service with the South West Pennsylvania Pipe Line Company, coming to the company from the United Pipe Line Company in 1881. He has been placed on the annuity list of the company. W. H. Fisher has been promoted to the position vacated by Mr. McCue.



OILWELL SUPPLY CO

World's Largest Manufacturers of Oil Field Equipment

NATURAL GAS DEVELOPMENTS

CAST IRON PIPE LINE WITH BRONZE WELDING

The use of cast iron pipe for gas mains has been confined almost entirely to relatively low pressure bell and spigot lead filled type in the larger cities. The Linde Air Products Co. spent several months investigating the possibilities of oxy-acetylene welding applied to jointing cast iron pipe and is offering the Tobin bronze welded joint as a satisfactory solution of the problem.

Recently a 6-inch gas line, 2,000 feet in length was laid in Long Island, N. Y. The line was made of de Lavaud centrifugally cast iron pipe bronze welded at all joints. The first section which was 1,270 feet in length is part of a 20-mile line which will provide gas through the center of Long Island at a pressure of 60 pounds per square inch. The first part of the line, when laid, was subjected to an air pressure test of 95 pounds per square inch which disclosed only two pinhole leaks in the bronze welded collars which were formed about the butted ends of the pipe.

The success of this line has been seen in the interest that it has aroused on the part of natural and manufactured gas distributors. The soil conditions in Long Island in which the line was laid are exceedingly destructive to any but cast iron pipe. Considerable trouble is experienced from electrolysis. The lessened electrolytic action due to the bronze joint of high electrical conductivity combined with the well known resistance to soil and moisture corrosion of cast iron pipe led many distributors to believe that this method of welding cast iron pipe for gas distributing systems will be given a trial in other parts of the country.

CARBON BLACK PERMIT IN IRMA-WAINWRIGHT

CHATHAM, Ont., July 19.—British Petroleums, Ltd., has secured from the Dominion Government a permit for the manufacture of carbon black from its natural gas production in the Irma-Wainwright Field. This is subject under the regulations to the right of any community or company supplying natural gas for domestic purposes to construct a pipe line to the field and have a first call upon the supply at a selling price to be determined by arbitration. The Department of the Interior takes the view that Edmonton, the only large center of population in central Alberta, has an assured supply of gas from the Viking Field, and that establishing a reserve of natural gas in the Irma-Wainwright Field would retard the rapid development of the potential resources of this area. The City of Edmonton is opposing the grant of a carbon black permit, claiming that the use of natural gas for carbon black will mean the rapid depletion of both the Viking and Irma-Wainwright Fields.

OKLAHOMA NATURAL'S SUPPLY

R. C. Sharpe, vice president of the Oklahoma Natural Gas Co., says his company is in good shape regarding a supply of natural gas, which is about the same as this time last year. The Oklahoma Natural has no extensive improvements planned and about the only work being done is in the changing of the Tulsa distributing system.

OKEMAH GASSER

OKMULGEE, Okla., July 19.—Gibson-Zahniser Oil Corp. & E. L. Robinson's No. 1 Miracle, in the southeast of the northwest of 25-11-9, 2½ miles south of Okemah, encountered 31,000,000 feet of gas in sand topped at 3,138 feet and drilled 28 feet in. The well is still drilling.

LOCO STATION TO BE RETAINED

WAURIKA, Okla., July 19.—The Lone Star Gas Co. of Texas will not abandon its booster station at Loco and establish another at Graham, according to reports. The Loco station will be retained to accommodate new gas soon to be received from the shallow field in the eastern part of Stephens County. This gas is to run through a line to be laid from the field, a distance of about 8 miles, by Stanley Lewis and associates, of Oklahoma City.

LYONS-QUINN GASSER FINALLY SNUFFED OUT

OKMULGEE, Okla., July 19.—The Eastern Gas Co.'s No. 6 Jane Jefferson, in 13-11-11, which has been a bone of contention in the Lyons-Quinn Pool for more than a year, is dead, snuffed out by the lubrication method, under direction of the United States Bureau of Mines. The owners are now pulling the 6-inch pipe and will cement and probably drill deeper.

This is the well claimed to have caused a fluctuation of production in this field. It was originally an oil well in the 2,700-foot sand where they encountered a large amount of gas. It was said that the lower sand got into the 2,700-foot oil sand, and for a time increased the production, and then caused it to drop off. This is said to have caused injury to adjoining leases. The Eastern Gas Co. and the State Corporation Commission requested the Bureau of Mines to take charge, and under their direction, the difficulty is being overcome.

At the request of the Shaffer Oil & Refining Co. and Ed Weddell, the latter's big gas well in 30-11-10, near Okemah, has been taken charge of by the United States Bureau of Mines. The well will be lubricated and the gas flow stopped and then cemented on top of the gas sand.

NATURAL GAS VENTS IN DRY BED OF LAKE

KLAMATH FALLS, Ore., July 19.—Eight vents, emitting natural gas, have suddenly opened in the dry bed of Tule Lake, 30 miles east of here. Tests by J. D. Howard, a local geologist, show the gas to be of paraffin variety. Flames more than a foot high, burning with intense heat, are reported to have been obtained in the tests. The vents or chimneys range in diameter from 6 to 30 inches and are several feet deep.

Between August 5 and 10 last year water disappeared from eight sections of Tule Lake Bed. Howard contends that nature is disproving the statements of some local geologists that this area is burnt out by volcanic action. Three oil companies are drilling on the same structure running through the lake bed. All three wells are reported to have shown indications of oil.

PUMPING STATION FOR PANOLA

SHREVEPORT, La., July 19.—A gas pumping station to cost probably $250,000 will be built 3 miles from Bethany, in Panola County, Texas, just over the Louisiana line. It will be the first unit in pumping plants to be used to send gas through the 210-mile gas line now being laid between Shreveport and Beaumont, it was learned at the offices of the Fortuna Oil Co., which is building the plant.

MAKING 30,000,000 FEET

OKMULGEE, Okla., July 19.—The Kingwood Oil Co.'s No. 4, in 3-9-9, topped the sand at 3,285 feet and is still drilling at 3,300 feet. The well is spraying oil and making 30,000,000 feet of gas.

Illinois Producers Gets Good Well Near Artesia, New Mexico

The following letter with the picture shown was received from F. G. Keyes of Roswell, N. M.: "I am enclosing a picture taken by myself that perhaps may be of interest to you. It shows the Illinois Producers' No. 3 located in Section 32-18-28, or about 17 miles southeast of Artesia, N. M., and about 60 miles south of Roswell.

"The picture was taken after the well had cleaned itself after a shot. It flowed like this for 6 minutes and then bridged. While working to clean out the bridge the well made nine flows over the top of the derrick. This happened with 20 feet of the sand covered out of a total of 46 feet of sand.

"This oil is 38 gravity and of paraffin base and contains a very high percentage of gasoline. The sand was encountred at 1,946 feet and was drilled through at 1992.

"This is an unusual field. The well above mentioned only has about 400 feet

of casing in it. No water is found below 400 feet and the formation stands up without casing. The well was drilled at an estimated cost of $6,000.

"There is another thing that is rather unusual and that is the Tigner-Windsor well, on the Grant Keyes permit located in Section 14-17-28 or about 9 miles northeast of the Illinois well, is down about 1,900 feet and the formation is running identical with the No. 3 of the Illinois. The last few feet looks as if the formation is growing thicker and that may throw this well some deeper before it hits the pay. Great interest is being shown in this well as it is making considerable gas and about a barrel of oil a day now.

There are several wells drilling and more will start at once. The Pitcher well looks very favorable also. This well is located in Section 12-18-27, which is 2 miles north of the Illinois No. 2, which came in for 4,000,000 feet of gas at 1,824 feet. The Pitcher well is drilling at 1,610 feet and found a sandy lime that made a good showing of oil. They bailed out three bailers of oil.

"H. W. Walker of Wichita, Kans., has three cars of material on the ground for a well in the southwest corner of Section 28-18-28.

"Charles H. Keyes of Bowling Green, Ky., has a rig on the road to drill on Section 21-18-28.

"The Illinois Producers are rigging up for two wells each 500 feet from the No. 3 east and south.

"There are about 10 wells drilling besides these mentioned above. A pipe line will be laid to Artesia to take care of the production as the Illinois has its 3,000 bbls. of storage about full."

F. G. KEYES.

BLACKWELL GAS AREA ONE OF THE GREATEST

BLACKWELL, Okla., July 19.—Blackwell is the center of one of the greatest gas areas in the Mid-Continent region, according to oil men here. There is gas to the right, gas to the left, gas to the northeast, northwest, east and west found in sands from 900 to 4,000 feet. The wells having open flows of from 10,000,000 to 60,000,000 feet after being drilled in.

The nearest gas area to the city is within a radius of 1½ miles northwest, in the Otstot Pool. There are six big gas wells in the pool. They range in production from 10,000,000 to 50,000,000 feet, encountered in sand at 3,400 feet.

The companies owning these wells, with locations, are:

Blackwell Oil & Gas Co. No. 2 on the Kumbler farm, southeast of 9-27-1w; Globe Refining Co. & Clark Denny No. 1 Harris, SE of 8-27-1w; Anolu Petroleum Corp.'s Nos. 1, 2, and 3, on School Section, 16-27-1w. Otstot-Haury-Manahan & Co., No. 1 on School Section 16-27-1w, having an open flow of 50,000,000 feet from the sand at 3,430-3,448 feet.

Six miles southwest of this location, in the Hubbard Pool, on what is said to be the same structure, the Alcorn Oil Co. is reported to have 30,000,000 feet of gas at 8 inches in from the top of the sand at 2,539 feet in its No. 1 North, C NE 12-26-2w, a half mile northeast of its No. 1 Hubbard well.

Otstot-Haury-Manahan & Co. are trying to mud off 55,000,000 feet of gas in No. 1 Skelton, in School Section 16-27-1w. If they succeed in mudding off 50,000,000 feet of gas at 3,430-3,448 feet in No. 1 Skelton, on School Section 16-27-1w, they will test the formations at 3,450 feet for oil. A special set of clamps is being made to pull a joint of 6⅝-inch split casing which will be replaced with another joint of casing before the gas is mudded off.

GASSER NEAR CHANDLER

CHANDLER, Okla., July 19.—The Magnolia Petroleum Co. has a well estimated to be making between 12,000,000 and 15,000,000 feet of dry gas, in No. 1 Dodrill, in the northeast corner of the southwest of 32-15-4, near Chandler, in Lincoln County. Lime was encountered from 1,736 to 1,750 feet, and water sand from 1,750 to 1,760 feet, and hole filled with water. Lime was drilled into again from 1,760 to 1,766 feet, where the gas sand was encountered. Total depth of the hole is 1,766 feet.

INDUSTRIAL LINE IN MONROE

SHREVEPORT, La., July 19.—The Morris interests have completed the construction of the first industrial gas line in the Monroe gas field, a portent of great industrial development in West Monroe, already the nucleus of a great manufacturing center. The line is 30 miles in length, running from the gas field north of Bastrop, to the $2,000,000 Brown Paper Mill in West Monroe, and was laid with great difficulty through the swamps and across the Ouachita River.

The Westcott Valve Company are *specializing* in high-grade Valves for the *oil industry*.

They know conditions in this field, and have introduced many improvements and refinements into the design and manufacture of pipe line, refinery, and drilling gate valves.

The Westcott Valve Company now have probably the world's largest output of pipe line valves. They also make a complete line of iron and steel gate valves for refineries, with special mountings for high temperature cracking. A superior line of steel drilling gates is also offered.

We believe the Westcott to be the best designed and constructed valve on the market. It is distributed exclusively by THE CONTINENTAL SUPPLY COMPANY.

THE CONTINENTAL SUPPLY COMPANY

GENERAL OFFICES: ST. LOUIS

Export Office: 2 Rector St., New York

London Office: Finsbury Court, Finsbury Pavement, London E. C. 2, England

MORE THAN SEVENTY STORES IN THE OIL COUNTRY

EQUIPMENT AND SUPPLIES

DIAMOND DRILLING BECOMING GENERAL

The continued success of the diamond drill in structure work and in actual production is fascinating to those who know how this form of drilling for oil has been opposed for years. Since the remarkable results obtained in the Tampico, Mexico, Field with Sullivan diamond drills have become known, the spread of diamond drilling on structure work has been fast, and has taxed the manufacturers in turning out equipment. Oklahoma, Texas, Louisiana, California, Colorado, Montana, Utah and now western Wyoming checks in with structure and production work with the diamond drill.

One of the recent completions was well No. 2 with Wyotah Oil & Gas Co. near LaBarge, Wyo. The coring of this well gave perfect core of the structure and the first perfect coring of oil sands in the district. Well No. 2 was the second well put down by the Wyotah Oil & Gas Co. Its first well showed by the cores that the work was not being done on the "high point" and after getting water production at 800 to 1,000 feet, the diamond drill was moved to No. 2 location and oil was encountered in this well with considerable gas pressure, at a depth of 429 feet.

The new well is reported good for 100 bbls. a day. It is located in Section 34, Township 27 north and Range 113 west, about three-fourths of a mile north of the Newlon well.

The larger oil companies recognize the important place the diamond drill has taken in their work. Just recently the options of one large company on patented land in western Wyoming called for diamond drilling within 90 days. The range of diamond drills is great. From the small "Bravo" driven by hand for prospecting in the wilds to the Sullivan FK capable of holes 1 mile deep, there is a machine for every condition and depth. It seems only a question of time until the diamond drill will be as common in the oil fields as it has been for many years in mining and contracting investigations.

TO MAKE VISIBLE PUMPS

The Hawkeye-Dart Truck Co., of Waterloo, Iowa, has started to make the Dart Visible pumps, to be used at the stations of the Hawkeye Oil Co., one of the largest distributors of refined products in the Central States. A special design involving a non-slipping rotary pump which is said to fill the 5-gallon bowl in 10 seconds is utilized in the equipment. These models are manufactured. The Hawkeye-Dart Truck Co. is owned by the Hawkeye Oil Co., which is a subsidiary of the Producers & Refiners Corp.

ENLARGING CHICAGO PLANT

E. F. Houghton & Co., with main office at Philadelphia, makers of oils and leathers for industrial use since 1865, has awarded the Austin Co., Cleveland, engineers and builders, a contract for additions to its Chicago branch plant. The new units include a compounding building, one-story with basement and a two-story mill type building 85 by 100 feet. The Austin Co. reports this a repeat contract, the third of major importance, built for the E. F. Houghton Co. during the past two years.

COMPRESSOR FOR ROMARTI

The Romarti Gasoline Co. recently ordered direct driven compressor equipment from Clark Brothers Co., for a booster station in the Burbank Field. It is understood this plant will deliver gas into the big Romarti plant, operaitng in that field.

PIPE AND TINPLATE PRICES HOLD WHILE OTHER PRODUCTS ARE DOWN

By B. E. V. Luty

PITTSBURGH, Pa., July 21.—The steel market in general continues in very dull, practically stagnant condition. Sales as a whole have been decidedly lighter since July 1 than they were even in the latter part of June, and there is not a single class of mill products that shows any improvement in demand.

The official report of steel ingot production in June was a little better than was to be expected from accounts given by the mills themselves, as it showed an ingot production during the month at 47 per cent of estimated capacity, and production and shipments of finished steel were at a slightly higher percentage than that, as some steel previously made was rolled in addition to the current production.

A clear case is made out that in June many of the steel mills understated their operations. They have done the same thing before in a dull market in which the maintenance of prices was open to question. The reason for the attitude is that the mills are afraid their customers will suspect them of price cutting if they seem to be running at a good rate. The main thing that supports prices is that the mills are watching each other and each mill knows that if it cuts prices the whole market is likely to be pulled down very promptly. Thus any steel product may decline quite suddenly eventhough it has previously been held punctiliously. This observation, of course, holds good as to merchant pipe and oil country goods, prices on which have thus far been held at the old level, ruling since late in April, 1923, while sheets have since then declined $4 to $7 a ton, the market now sharing various prices within that range, wire products, fully $2 a ton, and bars, shapes and plates from $5 to $7 a ton.

Figuring on Improvement

There is no disappointment that the steel market did not improve when the political conventions ended, for predictions that it would then do so had not been taken seriously. In the past few weeks the earliest prediction of improvement has set the middle of August as the time, while there are some fairly sanguine members of the trade who would not venture to predict improvement any earlier than October 1.

It goes, practically without saying, that the steel market can hardly become generally active, with a fair volume of buying all around, until the price structure is lined up again. It now presents the curious condition of pipe and tin plate being at the old prices, with no decline at all, while some other products have declined as much as $7 a ton, so that the balance is disturbed.

While the great bulk of pipe is made from steel which the pipe mills make themselves, there is some that is made from purchased skelp, and market prices of skelp and pipe are expected to be in harmony. When the present tubular goods lists were issued, in April, 1923, skelp was at 2.40 cents for grooved and 2.50 cents for sheared and universal. Now the prices are 2.05 cents and 2.15 cents respectively, or $7 a ton less. Quite possibly it is only a question of time until tubular goods prices in general are readjusted. There are no signs visible in the trade of any readjustment being in contemplation. A decline might be precipitated by one mill or another taking a notion to cut.

Oil Country Buying

Buying of oil country goods from the pipe mills continues of fair volume, with only a slight tapering off from week to week. All the buying is for very prompt shipment, nearly all shipments being made from mille stocks, which are ample. In May and June about 80,000 tons of line pipe was bought, the National Tube Co. getting the bulk of the business, probably about three-fourths. A much larger volume of line pipe demand is in sight, some of it being under actual inquiry. This business was brought to the surface by the prospect that mills, being much in need of tonnage, would name attractive prices. As the National Tube Co. has got the bulk of the business thus far, the independents are likely to make a drive for the business now coming out.

Pipe mills are operating at about 65 per cent, tin mills at about 50 per cent, and the steel industry as a whole about 40 per cent.

SPECIALIZED CATALOGS ON MANGANESE TOOLS

The American Manganese Steel Co. of Chicago Heights, Ill., has just finished a series of specialized catalogs, covering the needs of the various industries which use equipment made of this kind of steel. In these nine large catalogs, any one of which would be a credit to a manufacturer, every phase of the manufacture of manganese steel machinery is covered. The large general catalog, the ninth in the list, and by far the most complete, covers the entire ground of the industry as far as the unusually diversified character of the manganese steel founding industry permits.

From a typographical standpoint the catalogs are among the best that have been published during the past year. Added to this feature is the fact that they are complete in detail and cover every phase of the industry which they portray.

VICTOR TOOL MERGED WITH LANDIS MACHINE

The Victor Tool Co., Waynesboro, Pa., manufacturers of collapsible taps, automatic die heads, floating tool holders, and nut facing machines has been merged with the Landis Machine Co., Waynesboro, Pa., manufacturers of threading die heads and machines. In the future all correspondence applying to Victor products should be addressed to the Landis Machine Co., Victor plant, Waynesboro, Pa.

The Trade Name "Victor," will continue to apply to the entire line formerly made by the Victor Tool Co. There will be no change in the selling arrangements of the Victor product. This merger permits the Landis Machine Co. to handle both internal and external threading requirements.

H. A. IRWIN DIES IN JAPAN

H. A. Irwin, Far East representative of the Landis Machine Co., Landis Tool Co., Warner & Swasey Co., and Kearney & Trecker Co., died in Tokyo, Japan, recently. Mr. Irwin was in this country during the early part of 1923. He is survived by his widow, who is at present in Japan, his parents and several brothers and sisters, who reside at McConnelsburg, Pa. Mr. Irwin was for a long period of years direct representative of the Landis Tool Co. in Europe. He traveled extensively through France, Italy, Germany, Belgium and England. About four years ago he became connected with the four companies by whom he was employed at the time of his death, as representative in the Far East. He traveled in Japan, China and India in the interests of his principals.

NEW TWO-CYCLE ENGINE DETAILED IN CATALOG

One of the most interesting and complete catalogs issued recently by any of the oil industry equipment manufacturers is published by the Worthington Pump & Machinery Corp., New York City, which tells in detail of the new Worthington two-cycle Diesel engine. It says in part as follows: "The engine was designed to meet the demand for a fuel oil engine having the good qualities of the Diesel class, but of simplified construction adapted to small sizes, and capable of giving reliable service with a minimum amount of attention.

"The fuel oil is injected by a pump, the compression is high and there are no ignition or vaporizing devices. The combustion is nonexplosive and free from detonating shocks. The fuel consumption is low and the same grades of fuel oil are used as in the air injection Diesel engine. In its machine design, the best practice is followed. All wearing parts are liberally proportioned to insure long life and the consumption of lubricating oil is low. Much of the mechanism common to older Diesel engines has been completely eliminated, and there are no troublesome adjustments anywhere."

The catalog gives complete specifications, illustrations and diagrams of the various types of the new Diesel engine which it manufactures.

The Worthington Pump & Machinery Corp. makes Diesel engines of every type, two-cycle and four-cycle and those having both solid and air injection of fuel, horizontal and vertical types.

SUCKER ROD FACTORY BRANCH FOR DALLAS

Another milestone has been passed by the D. & B. Pump & Supply Co., Los Angeles, Cal., with the completion of a large addition to their factory branch in Dallas, Texas. The new plant is given over entirely to the manufacture of sucker rods and is intended primarily to supply the Mid-Continent and Texas demands for this D. & B. product.

Mr. Lyle Burgess, general manager of the D. & B. Pump & Supply Co., who has spent considerable time in Dallas getting the new addition under way and operating smoothly has recently returned to the home office. In order that there will be no delay in supplying the demands from the Mid-Continent and Texas fields, J. Orley Clutter, sales manager of the company is now in Dallas arranging all details of distribution in the various fields.

The D. & B. Co. maintains sales representatives in Tulsa, Wichita Falls, Houston and Casper, in addition to the Los Angeles and Dallas factories.

OPENS DETROIT OFFICE

J. F. Buhr has opened an office in the Blodgett Engineering & Tool Co. Building, Detroit, Mich., and J. F. Buhr Machine Tool Co. will act as sales representatives for the Blodgett Engineering and Tool products. The outstanding item of these is the Buhr ball bearing fully adjustable multiple driller. The Boldgett Engineering & Tool Co. also specializes in fine tool and die work.

NEW ENGINE CATALOG

Simplicity, efficiency and reliability are the factors stressed by the Jacobson Engine Works, of Titusville, Pa., in a recent catalog describing the various types of engines made by this concern. The sizes range from 1½-horsepower to 16-horsepower and they are used for portable as well as stationary power purposes.

"Spare the Axelson Rod and you *may* spoil the yield!"

Axelson Machine Company

General Offices and Western Factory: Los Angeles
Eastern Sucker Rod Factory: St. Louis
Mid-Continent Office: 1023 Kennedy Bldg., Tulsa, Okla. Mid-Continent Distributors: Frick-Reid Supply Co.
Casper, Wyoming, Office: With Frick-Reid Supply Co.

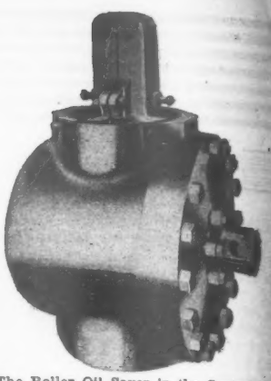
Standard Equipment

The Control Casing Heads, Common and Tee Casing Heads and the Roller Oil Saver have been designed, patented, manufactured and sold by the Oil Well Improvements Co. for the past 10 years. The Control Casing Head is made in sizes from 4¼ to 12½ inches. Special sizes to order.

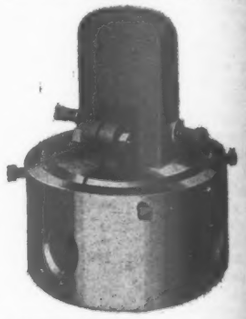
These devices have been used on thousands of wells doing their work efficiently.

The Roller Oil Saver in the Control Casing Head is of greatest value during the drilling-in, flowing or swabbing operations of large wells. They can be placed without interference to drilling operations or the flow of the well. The production of the well is delivered to the tanks without loss.

The Roller Oil Saver was designed primarily to conserve oil and gas during the drilling-in or swabbing operation, so that they do not escape as is the case from an open casing head. It consists of two pieces of special rubber compound fitting closely to the drilling line and adjusted from the side by set screws, thus taking up any reasonable wear without decreasing the effective packing contact on the line. It is made to fit the different sizes of Control, Common and Tee Casing Heads.

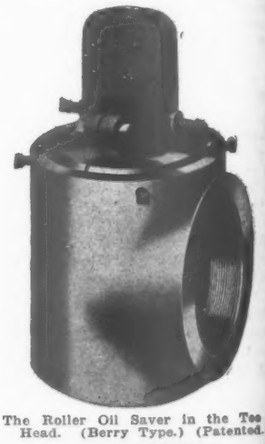


(1) The Roller Oil Saver in the Control Casing Head. (Straight Type.) (Patented.)

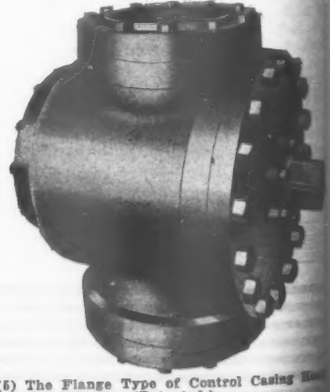


(2) The Roller Oil Saver in the Common Casing Head. (Berry Type.) (Patented.)

(3) The Roller Oil Saver. (Patented.)



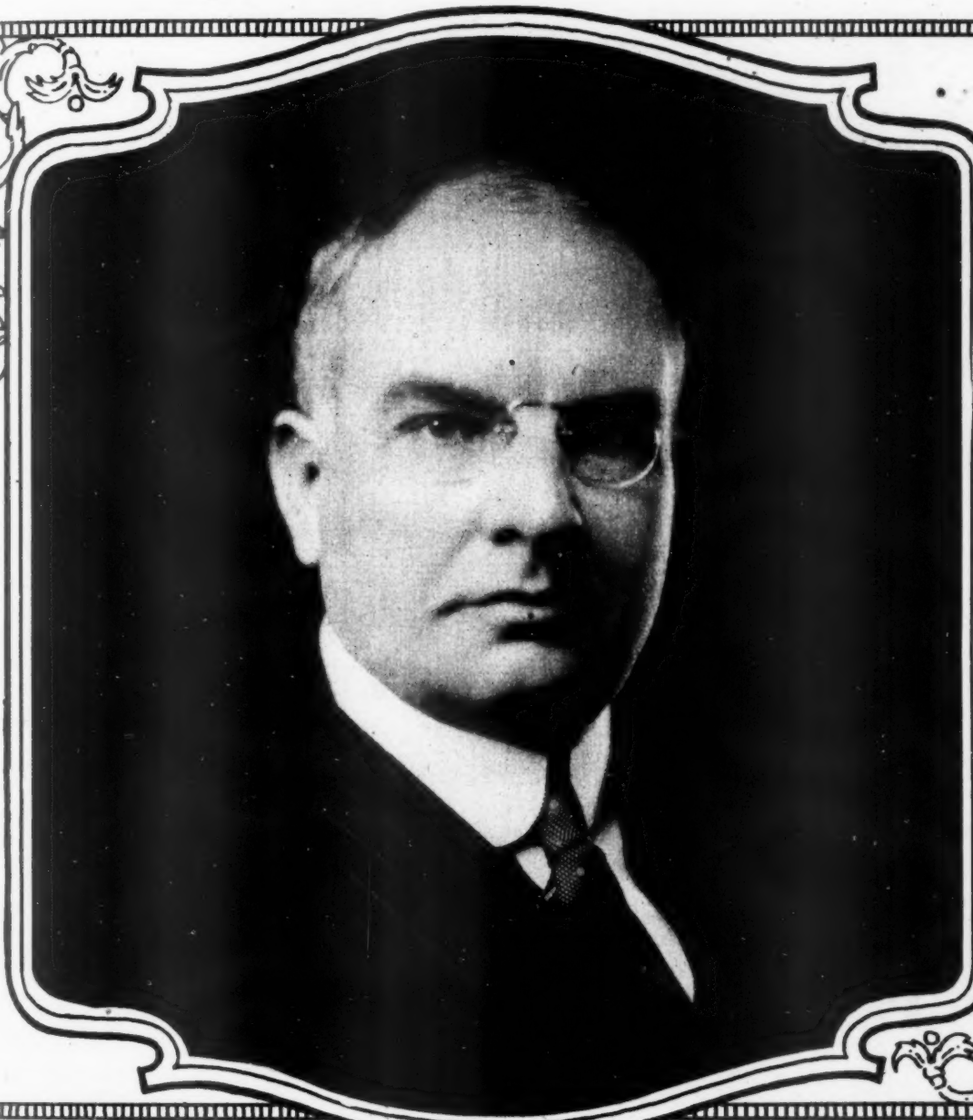
(4) The Roller Oil Saver in the Tee Casing Head. (Berry Type.) (Patented.)



(5) The Flange Type of Control Casing Head. (Patented.)

THE OIL WELL IMPROVEMENTS CO.
Tulsa, Okla.

The Oil and Gas Journal Gravure Section



AMOS L. BEATY

A big man at the head of a big company, a leader in one of the biggest industries of the nation—this is Amos L. Beaty, President of The Texas Company. The sightseeker from the West would instinctively pick Mr. Beaty as a captain of industry as he swings with the crowd down Broadway. He stands head and shoulders above the sidewalk throng, commanding attention not only because of his stature but also because of his outstanding personality, developed by doing big things in a big way It is a long journey from a small town legal practice to the executive position in one of the largest and most conservative oil companies of international importance, but Mr. Beaty accomplished this feat. He became general counsel of The Texas Company, director and member of the executive committee in 1913. He was made president in 1920. His record since that time has been a succession of accomplishments, culminating in his recent challenge against "fishing expeditions" under the guise of investigations.

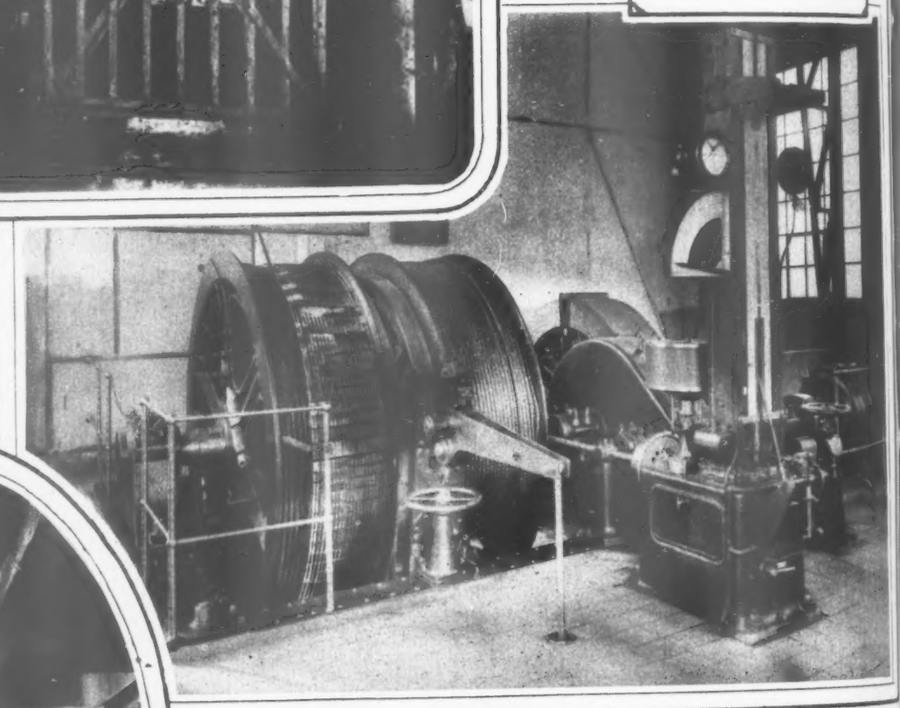
—Photo by Gessford.

"Oil Mining in France"

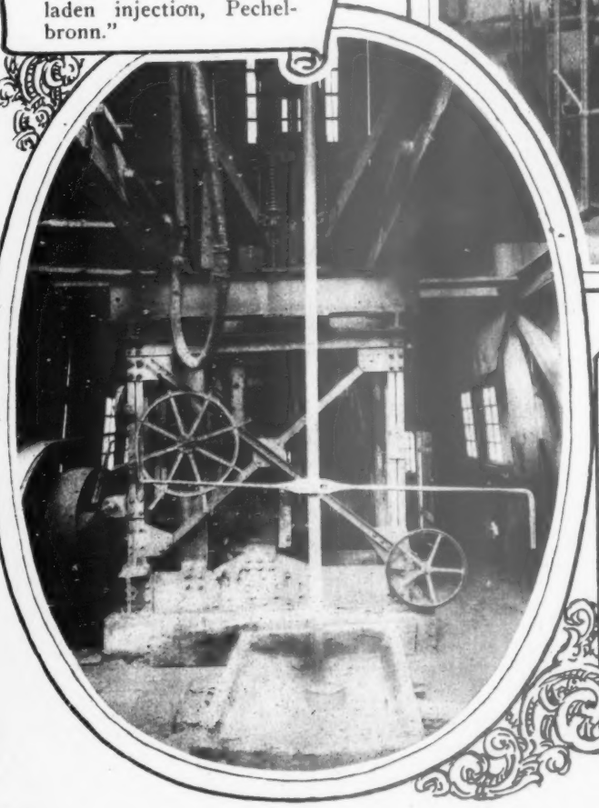
"In France, petroleum is obtained by mining as well as by drilling wells. Shafts are sunk and hoisting machinery is used to bring up the product which is refined intensively. The mining of petroleum in the French oil fields of Pechelbronn, is one of the most diverting phases of the industry."

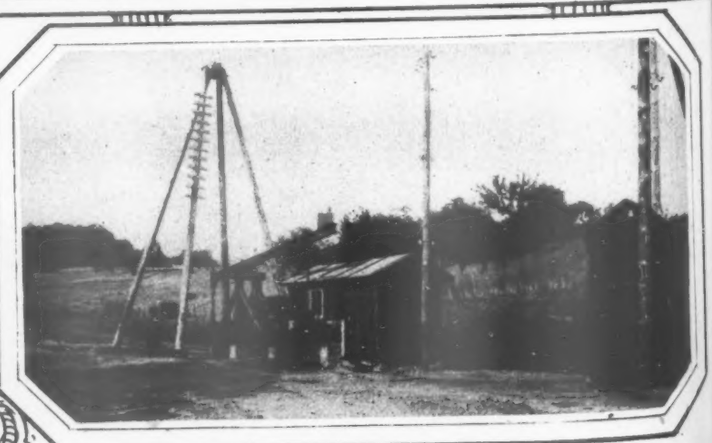
"Oil shaft elevator, showing car and workman, Pechelbronn."

"Electric driven drums for shaft elevator, Pechelbronn."



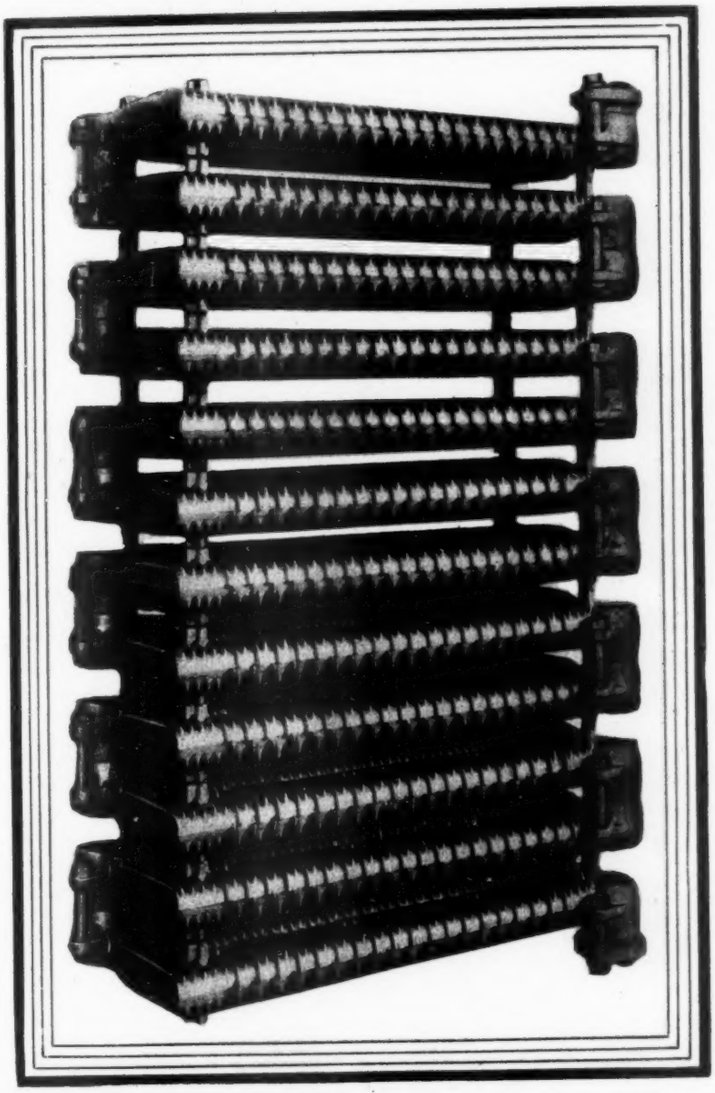
"Interior view of derrick, showing Racky system of drilling, using mud laden injection, Pechelbronn."





"Electric driven oil pump used to raise oil to surface, Pechelbronn."

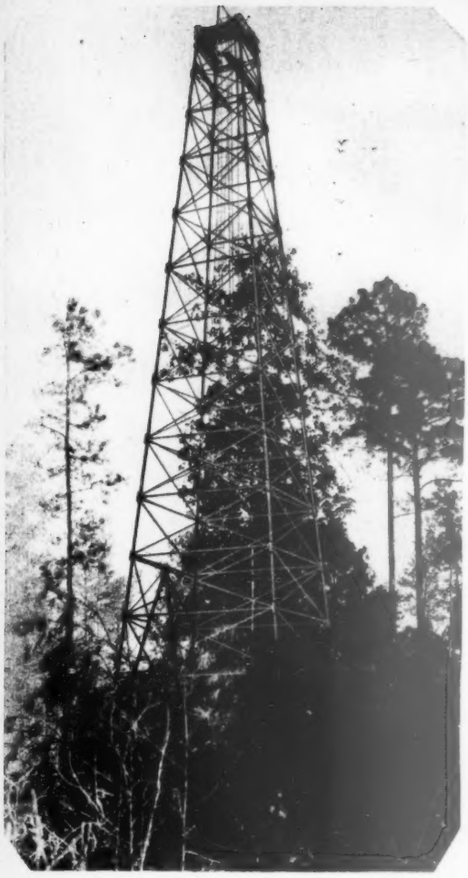
STERLING OIL CONDENSING SECTIONS



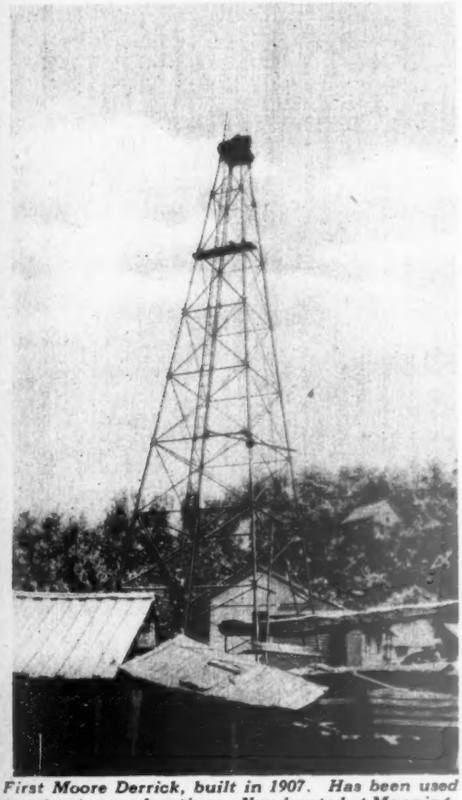
Sterling Condensing Sections possess many advantages over the old style coil. They last longer, condense more rapidly, eliminate back pressure in the stills and are easily removed for cleaning or other purposes.

THE NATIONAL SUPPLY COMPANIES

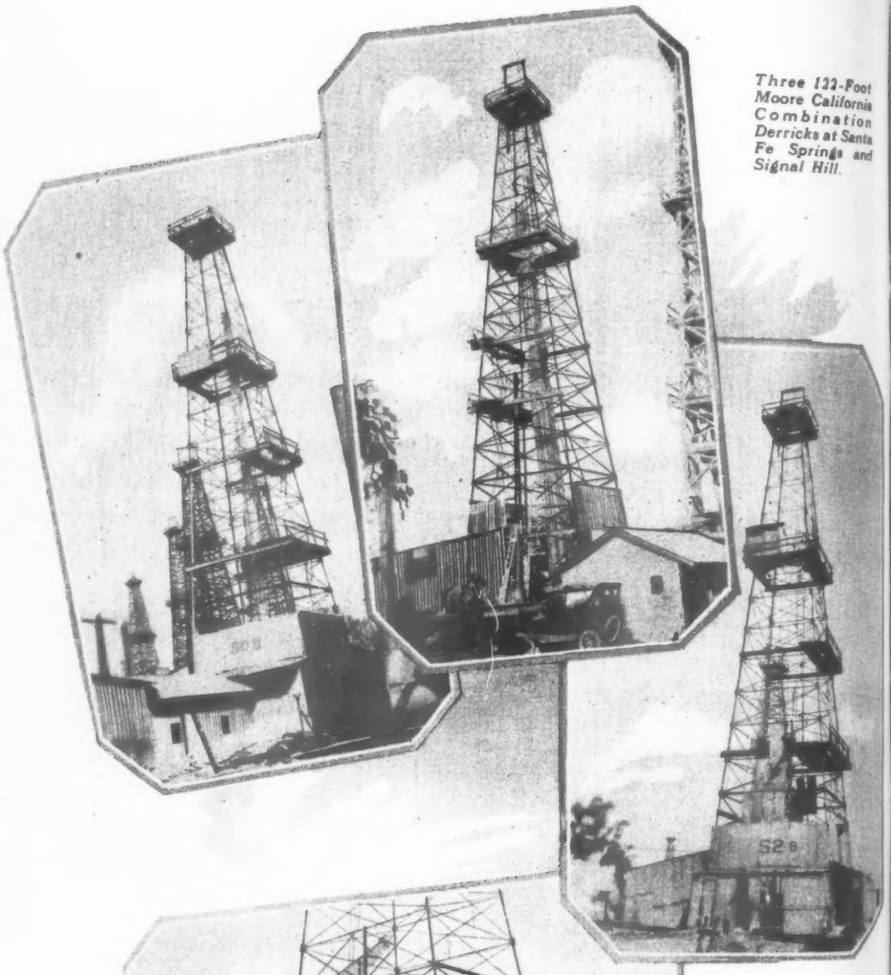
DERRICK DOINGS



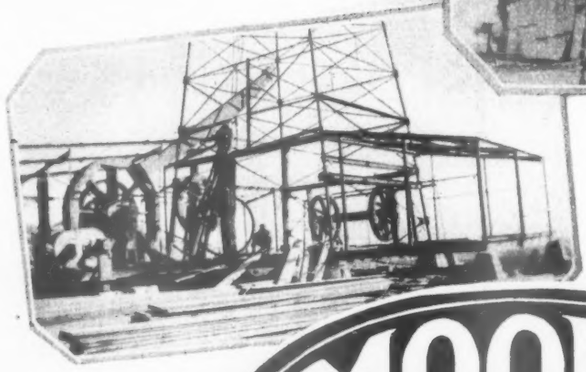
A 91-Foot Moore Rotary Derrick on its sixth location near Lisbon, La. First used on five locations at Stephens, Ark. This is one of the six Moore Rotary Derricks purchased at one time by the Standard Oil Co. of La. These six derricks by May, 1924, had drilled over 30 wells, with total repair expense of only $18.00 for bolts. Fire risk makes steel derricks most advisable in wooded country.



First Moore Derrick, built in 1907. Has been used in a great many locations. Now located at Manningtton, W. Va., serving as a pumping and cleaning-out derrick. In excellent condition in spite of 17 years' exposure and continuous use.



Three 122-Foot Moore California Combination Derricks at Santa Fe Springs and Signal Hill.

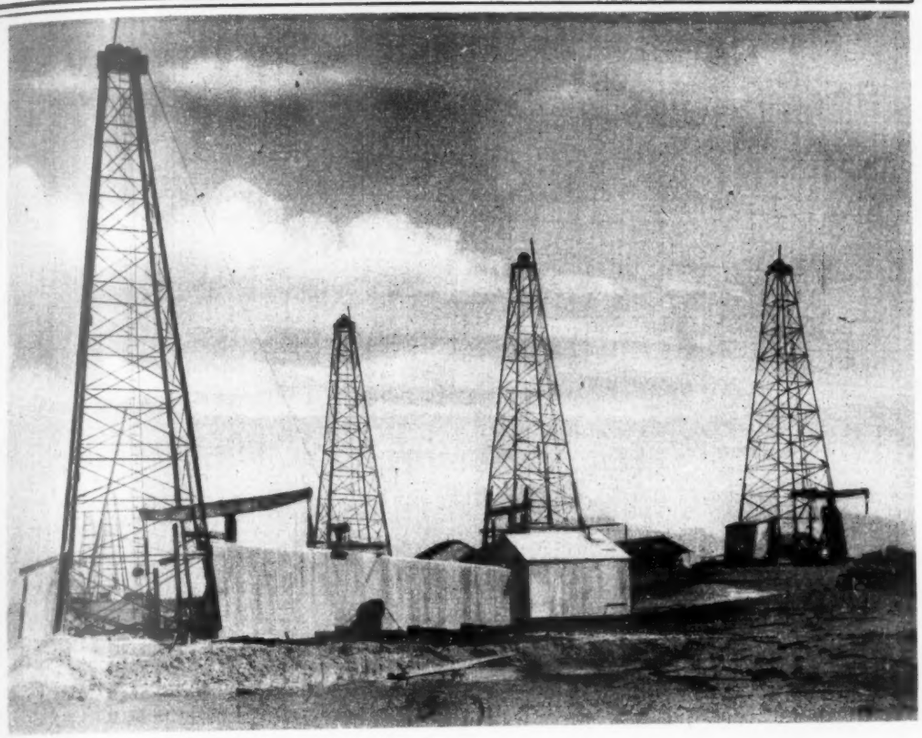


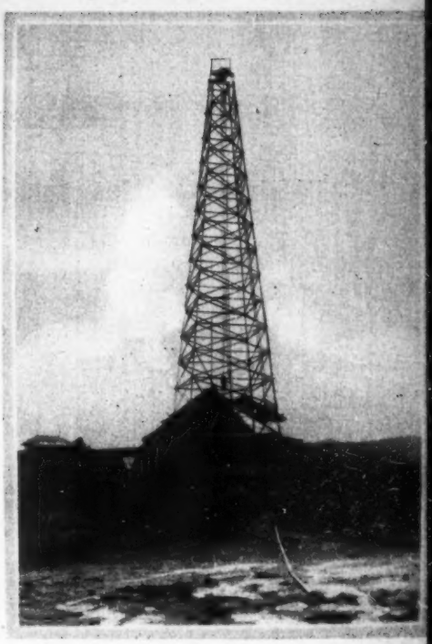
Erecting a Moore 122-Foot Derrick with all-steel rig on Murphy Coyote Lease, La Habra, Calif. Note steel Bull, Calf and Band Wheels, Steel Foundation, etc.

MOORE TUBULAR STEEL DERRICKS

LEE C. MOORE & CO., INC, Pittsburgh—Tulsa

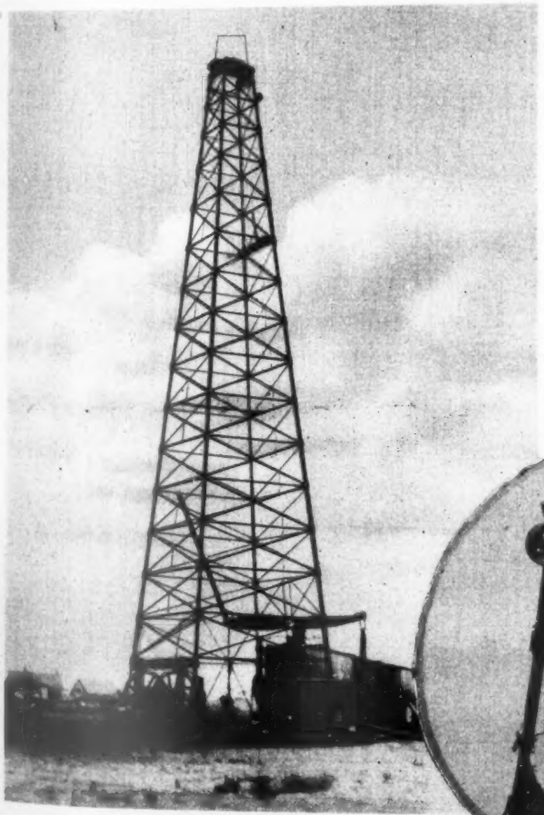
HERE AND THERE





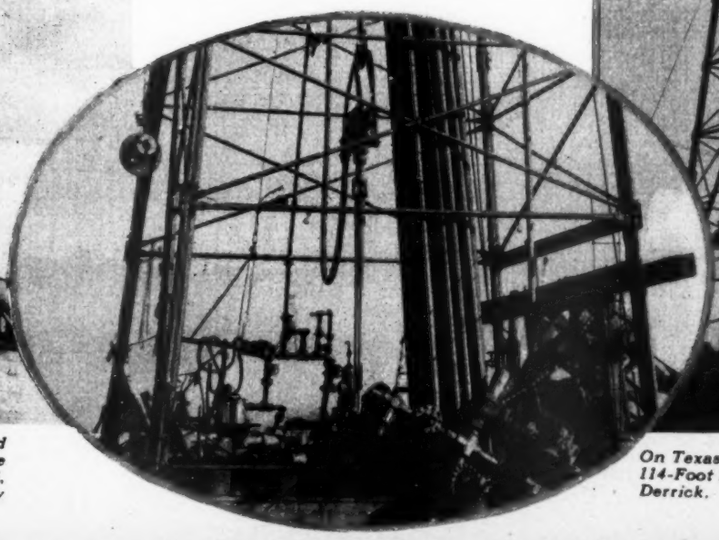
New England Oil Corporation, Menito No. 2, Misoa Field, Venezuela. Well producing 800 bbls. per day. 105-Foot Moore Combination Tubular Derrick.

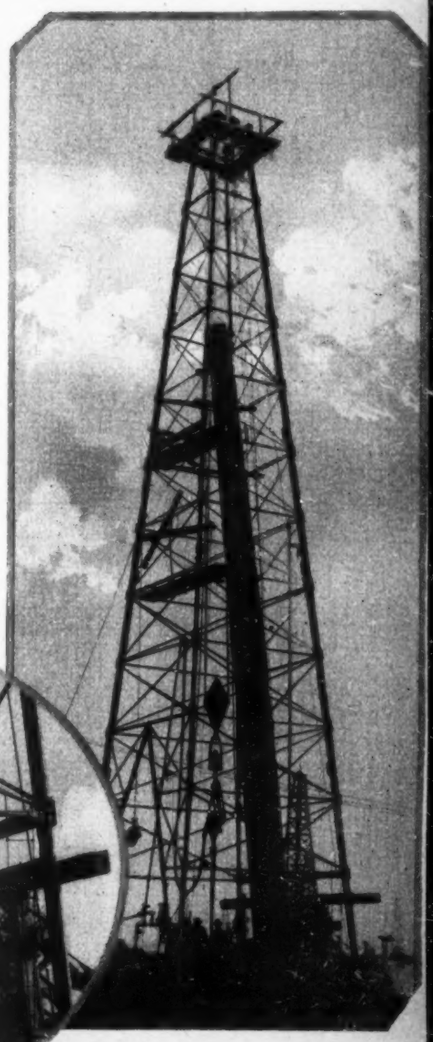
Four Moore Derricks on T. B. Slick Endicott Lease, Tonkawa Field, Okla., all 74-Foot Pumping Derricks with 3-inch legs. The three derricks on right are over producing wells, hence the single legs. When the derrick on left has finished drilling, reinforcing legs will be removed and used elsewhere. Over 30 Moore derricks on this lease.



Old drill stems are salvaged and used for reinforcing legs while drilling. After completion of well, reinforcing legs are moved to a new location.

Moore 88-Foot Rotary Derrick, 3-in. tubular leg reinforced with 4-in. leg. Down 3500 feet. (Gulf Production Company at Sour Lake, Tex.) Note details of double legs in oval.

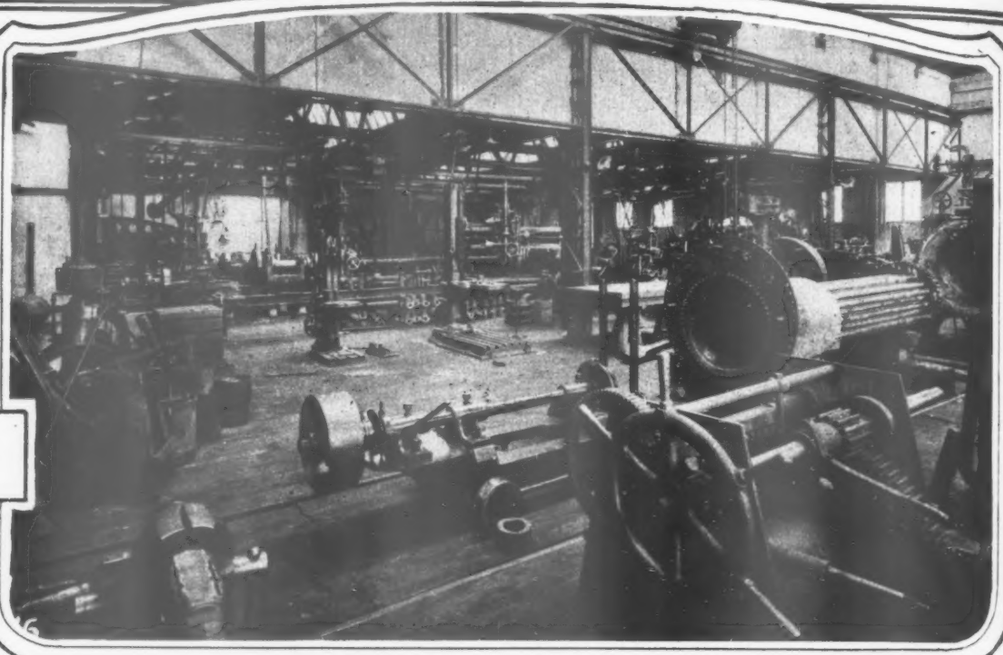




On Texas Co., Davis Lease, Tonkawa, Okla. 114-Foot Moore Combination Tubular Steel Derrick.

"French Methods Hold Interest"

"Many curious machines, instruments and appliances are used in other countries to find and refine petroleum. Curious practices are reported by oil men who have visited foreign fields. France has her specialities, many of which astonish the American."

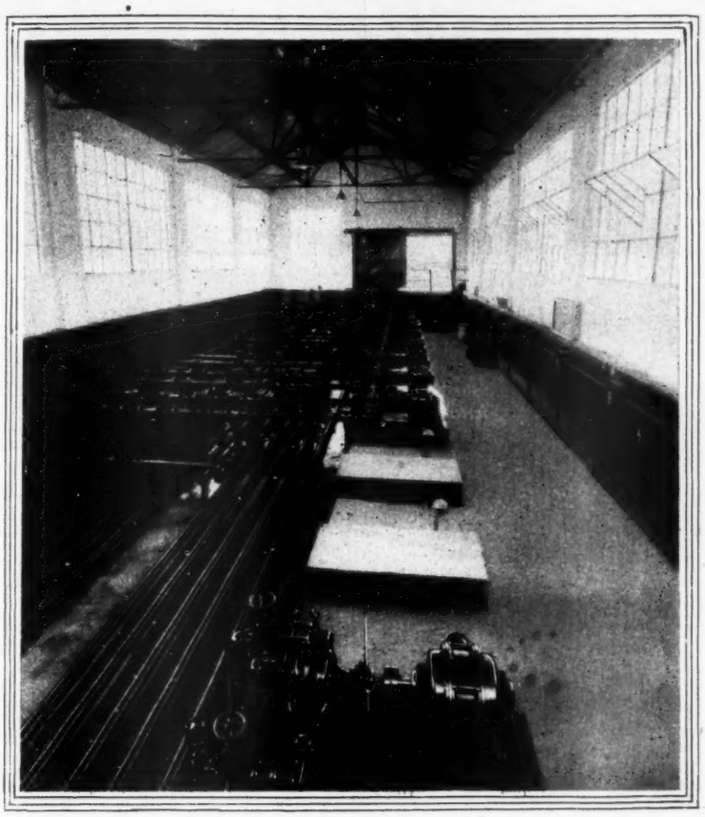


"Machine shop, production department, Pechelbronn oil fields."

"Pipe and casing yard, Pechelbronn."

"Another view of casing yard, showing derricks in background."

"Derrick and engine house, Pechelbronn."



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"Refining Oil in France"

"Crude oil storage and dehydrating station, Pechelbronn refinery."

"View of part of Pechelbronn refinery, 1,500 barrels daily capacity. At left, vacuum stills."

"Birdseye view of French oil mine, Pechelbronn."

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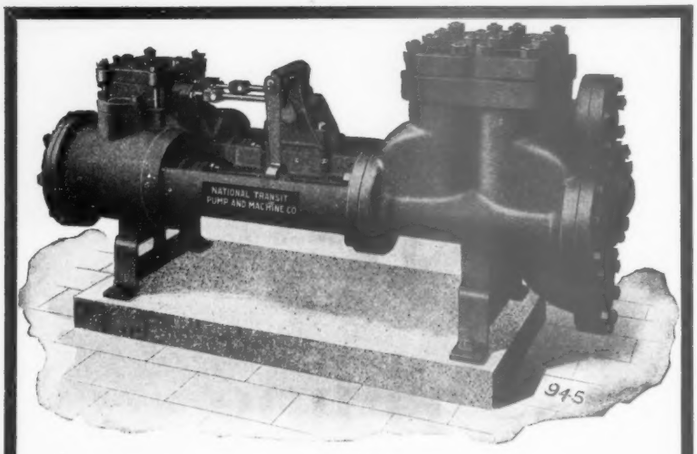

Fig. 945

10x3½x12" Valve Pot Type for 650 lbs. working pressure. 80-120 barrels per hour. 4" suction and 3" discharge connections.

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MISSISSIPPI BEING EXPLORED FOR OIL, WITH 27 RIGS UP IN 27 COUNTIES

By Vern T. Whitney

JACKSON, Miss., July 19.—The oil producing companies are keenly alive to the necessity of finding new oil fields and some of the farseeing of them have their eyes on the State of Mississippi as the next probable great oil bearing area.

A lot of haphazard exploration has been done in the past but mostly by small concerns without competent geological guidance and without adequate financial resources. No producing well has yet been brought in but in many of the holes drilled some very encouraging showings of both oil and gas have been encountered.

Some of the most optimistic oil fans of the State have a hunch that the present year will see a great gusher discovered. This prophecy is not based solely on hunches either. There are about a dozen wells being bored at this time where locations have been selected with more care than formerly and some of these promoters have ample capital to go down to a real test.

The most urgent necessity in Mississippi today, it is said, is for some real strong company to map out properly the numerous structures and then put a first class rotary rig in the hands of a competent driller and enough money in the bank to back up the drilling crew. If there is no oil in Mississippi, then they say, all the laws of nature and geology will have been reversed.

Mississippi received the most attention of any of the southern group of States during the past year and a half, and interest extends to all parts of the State. At present there are 27 rigs up in 24 different counties, 11 of which are active.

Late Completions

In the extreme south central part of Mississippi, in Pike County, bordering the Louisiana State line, the Gulf Drilling Co., Inc. test on the Culprit farm, near Magnolia, was reported abandoned at 3,100 feet.

In Tallahatchie County, in the northwestern part of the State, a test on the Bardwell, Section 32-23-3, near Charleston, was reported abandoned at an unknown depth. The Selman chalk was encountered around 2,604 feet. It is reported that Doctor Busse, a well known wildcatter, has started a test near Charleston after abandoning two old wells in the same vicinity.

The Mississippi Oil & Refining Co.'s initial test on the Morgan farm, Section 18-11-5, near Iuka, Tishomingo County, was abandoned around 2,600 feet. Several showings were encountered, as well as a number of good looking sands. Tishomingo County is in the northeastern part of the State, near the junction of Tennessee and Alabama.

Reports from scouts of the major companies and information from other sources, discloses that the following counties are either being tested or will be tested in the near future. The location of the new work is as follows:

The Danner Gas & Oil Trust Co.'s No. 2 Flaherty, Section 8-13-3, Chickasaw County, was drilling at 2,700 feet.

The Marshall Oil Co.'s No. 1 Marshall, Section 6-2-1, Copiah County, was shut down at 1,802 feet; B. H. White's No. 2 White, Section 15-1-3, was making progress at 2,800 feet.

The Mississippi Exploration Co.'s No. 1 Bill Young, near Port Gibson, in Claiborne County, was putting the finishing touches on its derrick.

In Holmes County, at the Free Run Oil Co.'s No. 1 test at Coxburg, Section 18-13-1, the derrick was already erected and the machinery is now being installed.

Charles H. Stoll's test near Conway, in Leake County, was shut down at 300 feet as the operator was changing from cable to rotary.

The Courtland Oil & Gas Co.'s No. 2 Kiihni, Section 35-27-2, Panola County, was drilling and testing at 2,600 feet.

In Perry County, the Donald Oil Co.'s No. 1 Donald, near Richton, was shut down awaiting to test casing which was set at 2,180 feet.

The Mississippi Exploration Co. has a derrick erected on the Poor House lands, 3 miles southeast of Magnolia, in Pike County.

In Rankin County, the Finkbine Oil Co. changed from cable to rotary tools and was drilling at 1,500 feet on its test in Section 7-3-4.

The Mississippi Oil & Gas Syndicate's No. 1 Graham, 1 mile south of Forest, Section 21-6-8, in Scott County, was progressing at 4,000 feet.

The Alhambra Oil & Gas Co.'s No. 3 Williams, Section 30-14-9, Washington County, was shut down at 3,300 feet.

The Gulf Development Co.'s No. 1, near West Point, Clay County, was a rig.

In Union County, near Walleville, the Minyard Weel Co.'s No. 1 J. Woodson, Section 36-7-3e, was shut down at 1,200 feet; same company's No. 1 Sappington, Section 27-2-3e, was a rig.

Fletchering & Co.'s No. 1 McGehee, Section 1-5-3, in Franklin County, was shut down at 3,100 feet.

Benninger & Beach's No. 2 Elton, in Hinds County, was shut down at 1,475 feet.

The Manhattan-Texas Petroleum Co.'s No. 2 Truly was shut down at 1,100 feet.

The Jackson Oil Co.'s No. 1 test, near Utica, in Jackson County, was reported drilling at 700 feet.

Near Oxford, in Lafayette County, Kinsey & Co.'s No. 1 K. Banks, Section 27-11-4, was shut down at 600 feet.

The Anderson Drilling Co.'s No. 1 Billups, Section 12-2-1, near Artesia, in Lowndes County, was shut down at 2,100 feet.

In Lincoln County, the Anderson Drilling Co.'s test near Hartman was shut down at 1,050 feet.

Stonum & Co.'s No. 1 J. E. Summers, Section 7-10-9e, near Fulton, in Itawamba County, was shut down at 500 feet.

In Calhoun County, the Northeast Oil & Gas Co.'s No. 1 Gregory, near Calhoun City, is a rig.

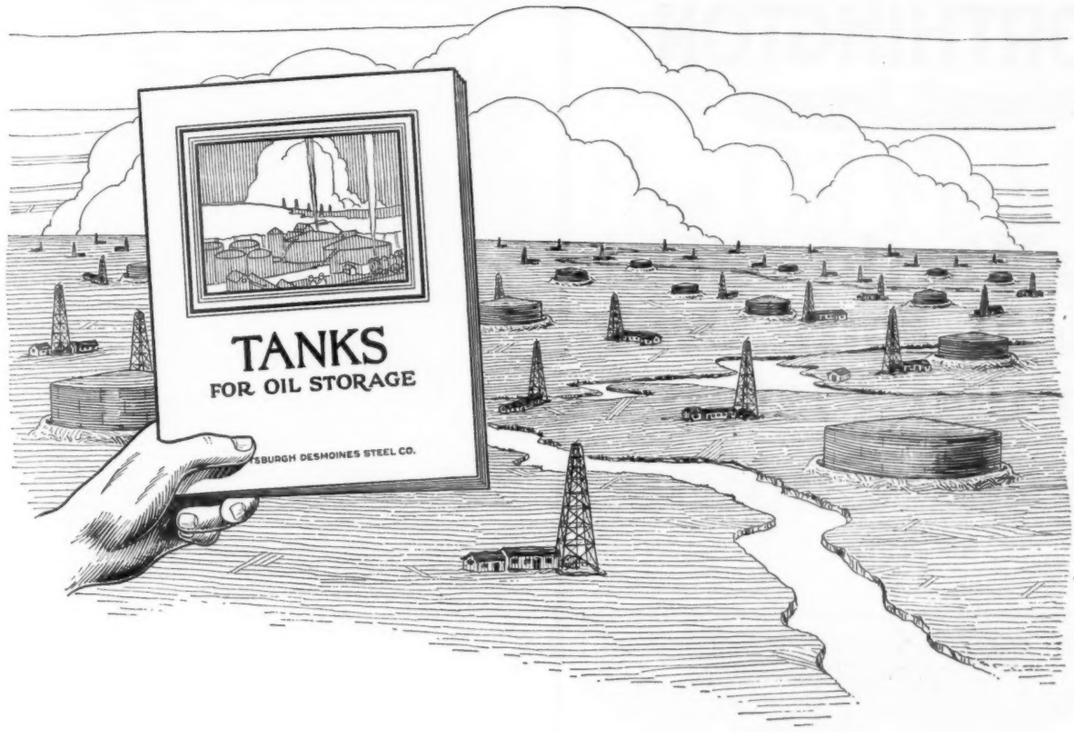
Douglas St. Clair & the Middle States Oil Corp.'s test north of Carthage, in Leake County, was shut down at 250 feet waiting for 8-inch casing.

The Madison County Oil Co.'s No. 1 Nichols, Section 7-10-4, Madison County, was shut down at 2,800 feet.

Borden & Co.'s test near Granada, in Granada County, was shut down at 650 feet.

BERGIUS PROCESS TEST

At a recent meeting of the Societe de Chimie Industrielle, M. Kling, director of the municipal laboratory of Paris, gave a report on the Bergius process of cracking coal and heavy oils by means of preliminary hydrogenation at high temperature and pressure, based upon a personal inspection and study of the recently completed plant at Mannheim, Germany. The process as explained in Industrial and Engineering Chemistry consists in heating the heavy oil in presence of hydrogen under pressure, to temperatures of about 350 degrees. At a certain point a diminution in the rate of increase of pressure with temperature shows that combination has occurred. The cooling curve is considerably below the heating curve, and indicates roughly the amount of hydrogen that has been fixed. When the product resulting from this treatment is distilled, the amount of lighter fractions obtainable is increased from only a few per cent to 80 or more. Furthermore, analysis of the gaseous product recovered after the hydrogenation shows that the amount of hydrogen in it is nearly equal to that introduced in the first place. The greater part of this hydrogen can be recovered by a cracking process and reused. Hence the actual consumption by hydrogen by this process is very low.



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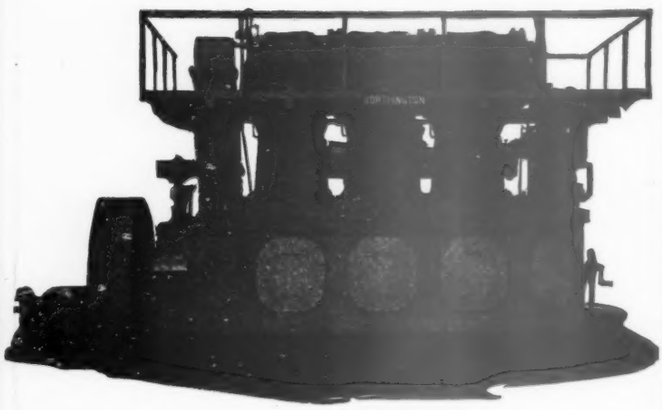

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COLORADO, NEW MEXICO AND UTAH TO BE THOROUGHLY TESTED THIS YEAR

By F. J. S. Sur
Geologist

The States of Colorado, New Mexico and Utah, which heretofore have not had the center of the stage in the oil industry, will this year be thoroughly combed and tested for oil and gas as no States have heretofore been examined. The last five years have shown greater advancement in the science of oil geology than have the preceding 15 years. New facts and data have been brought out to enable the operating comapies to eliminate the hazards in prospecting for oil as never before.

Types of structures found in other States and countries which produce commercial accumulations, which years ago were passed over, will be examined and tested.

Formations that were passed over with the belief that they could not hold hydrocarbons in them will be drilled in these three States this year for the reasons that they have proven prolific producers in other parts.

There are more scientific men of the geological fraternity working in these three States at the present time than have ever been assembled in a territory or region many times the size of it. These have been sent here and have been brought here by operators who have the prime object in mind of getting oil and profit from the earth and not from the people who buy stock. The last two years have proven to the promoters that if they cannot get oil, they cannot keep on promoting.

Folded Structures

The layman usually hears of domes and anticlines as the only producing geological structures. The modern geologist today is searching for many other types of folded structures that have been proved by precedent in many places to trap or allow for the deposition of oil in mother sands and migratory sands. Structures such as monoclines, terraces, fissures, plunging anticlines, anticlinal noses, structures sealed and closed by faults, and regions where lensed sands are tilted, all will be carefully considered and possibly tested.

Formations of the Tertiary period, such as the Wasatch of the Eocene, which has shown oil at Spring Valley, Fossil, Hillard and La Barge, Wyoming, and the White River formation of the Oligocene at Douglas, Wyo., will receive studious attention where heretofore they were counted as extremely doubtful as future producers.

The sands of the upper Cretaceous measures, such as the stray sands of the Pierre, which have produced oil at Florence, Colo.; Elk Basin, and Cody, Wyo.; the Hygiene, now producing at Boulder, Colo.; the Shannon, producing at Salt Creek, Big Muddy and Pilot Butte, Wyo.; the Virgelle, or its corresponding position, producing gas in Montana and Alberta; the Niobrara, producing at Powder River and Boulder, Colo.; the Nio-Benton, which produces the gas in the new Wellington Field, Colorado; and many other new uncorrelated sands of Cretaceous measures will be carefully considered, not including the known standybys which have been prolific producers in Wyoming.

The Jurassic period produced the Sundance formation from which oil is obtained in northeast Wyoming.

The Trissiac produced oil at Lander, Wyo., from the Chugwater formation.

The possibilities of finding gas in the Permian series in New Mexico are not beyond reason.

Test Pennsylvania Series

The Carboniferous upper coal measures or what are usually called the Pennsylvanian series, will be tested and studied this coming year for the reason that they have produced and are producing oil in nearby States. The Embar formation is producing oil at Lander, Wyo.; the Goodridge sand of the upper Pennsylvanian formation at Bluff, Utah, has been producing for many years; the Tensleep sandstone has shown great possibilities in central Wyoming. Other States, Kansas, Ohio, West Virginia, Oklahoma and Texas are getting great production from different sand formations of the Pennsylvanian series, and there is no scientific reason why this formation should not produce in Colorado, Utah and New Mexico.

There are now known and roughly mapped over 82 possible geological structures throughout Colorado, over 104 possible geological structures in New Mexico, and an unknown number in Utah that this year will all be given close scrutiny by men whose judgment and experience means much toward the future of oildom.

The analysis of the coal found in fields in the vicinity of structures to show the percentage of fixed cargon will do much to eliminate the hazard of the oil drilling industry. The analysis of water found in synclines and on the flanks of anticlines by drilling wells in regions where the surface evidences of the structure are obscure, helps to define crests and positions of accumulation zones. The drilling of obscured or covered flanks of structure by portable drilling rigs to ascertain the dips of several formations, will be done in this region under discussion, on a scale hitherto unknown.

CANDIDATE C. W. BRYAN CITES "GASOLINE WAR"

WASHINGTON, D. C., July 19.—Gov. Charles W. Bryan, Democratic nominee for vice president, evidently intends to make use of his "gasoline war" record in Nebraska in his campaign. One of his interviews quoted him as follows:

"Likewise we established gas filling stations operated by the State. We got our pumps going three weeks ago and they had only been going three days when the gasoline trust reduced their price from 23 cents to 17 cents a gallon. This was done in the capital, and I have notified the oil combine that unless the price of gasoline is reduced to 15 cents by the time of my return within the next 10 days that I will order it put on sale by the State in all sections.

"The people saved $10,000,000 last year by our coal stand and will save $600,000 a month in gasoline.

"I mention these things, not because of any pride of achievement, but to show how a Government, Federal or otherwise, should operate economically, efficient and with the thought of the people's welfare continually foremost.

"I am in favor of Federal, State or municipal ownership of anything except natural resources, such as water, or when business combinations, particularly utilities and those supplying vitally necessary products, defy all authority."

PARAGON REFINING CO. ELECTS NEW PRESIDENT

TOLEDO, Ohio, July 19.—A change in policy of the Paragon Refining Co. is expected to result from the election of E. W. Edwards of Cincinnati as president at a meeting of the board of directors.

The election of the Cincinnati man as head of the company is taken to indicate that the policies of the company will be determined by Cincinnati interests.

Mr. Edwards, head of the E. W. Edwards Manufacturing Co. of Cincinnati, has been a director in the Paragon Company for some time, and succeeds L. R. Crawford, one of the best known refinery men in the country, who recently resigned as president after holding the position three years.

Improvement in the oil market was foreseen at the meeting and the decision made to increase production of the big Paragon plant, starting at once.

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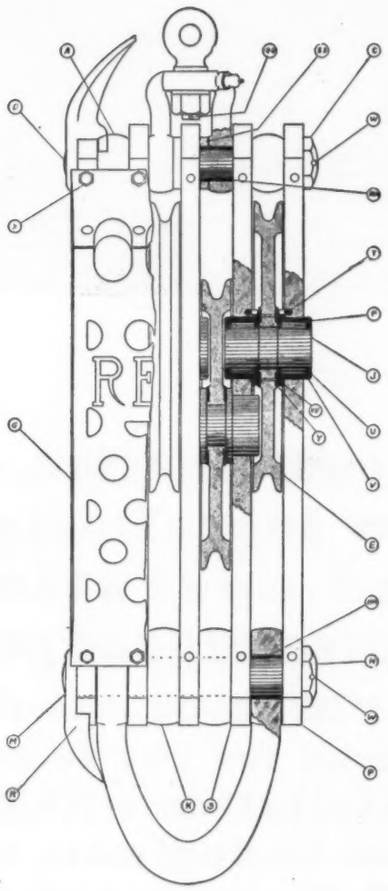

In this new traveling block our engineers have developed a stronger and more durable unit, with 200% more bearing surface than found in ordinary traveling blocks. Each of the sheave wheels has an individual pin with roller bearings, lubricated by the positive Alemite system. The pin rotates with the wheel. The sheaves are of special alloy steel with hardened rims. An internal spacing bushing on the clevis prevents the latter from ever binding. One hundred per cent guard protection is embodied. The cable holes in the guard are 5 degrees tip, ample to prevent cable rubbing.

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We shall be pleased to give you further information regarding this block. Ask for catalog.

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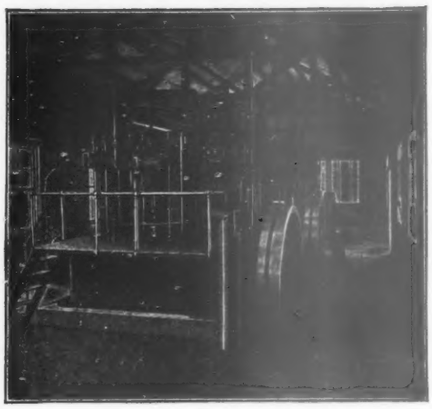

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Higher Gas Rates Finally Approved By Toledo Council

TOLEDO, Ohio, July 19.—With only one dissenting vote, council approved legislation for a new natural gas rate for Toledoans which will go into effect in four months and continue until May, 1925, unless repealed by council.

The new rate, a compromise on the original demands of the Northwestern Ohio Natural Gas Co., provides for retention of the 35 cents net rate for the first 5,000 feet. It also authorizes a continuance of the 75 cents per month service charge. The schedule provides for a higher rate for consumers who use more than 5,000 feet per month, with large consumers especially hit by high rates.

The maximum under the existing schedule is 65 cents per 1,000 feet, while under the new rate the maximum for consumers using more than 35,000 cubic feet per month is 85 cents per 1,000 feet.

President John McMahon said most of the ordinary gas consumers use less than 5,000 per month and there will be no difference in the rate they pay for such consumption.

The detailed schedule provides:

Thirty-five cents per 1,000 feet for the first 5,000 feet; 50 cents per 1,000 for the second 5,000; 60 cents per thousand for the third 5,000 feet; 75 cents per 1,000 for the next 20,000 feet; 85 cents per thousand for all in excess of 35,000 feet.

The present rates provide: 35 cents per 1,000 for the first 5,000; 45 cents per 1,000 for the second 5,000; 55 cents per thousand for the third 5,000; and 65 cents per 1,000 for all in excess of 15,000 feet.

Adoption of the new schedule will permit the gas company to make extensions that will supply gas for many districts now without natural gas, President McMahon stated. Council members, appreciative of the higher rates charged in other cities, contested primarily to save the low rate for small consumers, whom they felt could least afford to pay increased prices.

The original offer of the company, providing a slightly increased rate for small consumers, was presented to council several months ago by the company. At that time, council voted to disapprove the rate, contending that the small consumers should be protected.

President McMahon volunteered to work out another schedule that would permit the low rate to continue and this legislation is the result of his efforts. Even with the increased rate for large consumers, Toledo is still enjoying one of the lowest natural gas rates in the State, it is said.

EASTERN PIPE LINE REPORT FOR JUNE

Receipts of crude petroleum during the month of June from the wells by the pipe lines of the Eastern division, which make regular monthly reports of their runs, were 1,896,901 bbls. The daily average receipts were 63,230 bbls. This is a decrease of 83,296 bbls. in the total and a loss of 712 bbls. in the daily average when the figures are compared with those for the previous month, May. The daily average receipts were 14,368 bbls. less than the daily average runs for the month of June, 1923.

All of the pipe lines which are included in this report showed decreases in the total amounts of their runs with the exception of the Lima division of the Buckeye Pipe Line Co. and the Indiana Pipe Line Co.

The receipts of crude petroleum during the month of June by the pipe lines which serve the Illinois Field amounted to 725,061 bbls. The daily average was 24,169 bbls. This is a decrease of 25,919 bbls. in the total and a loss of 59 bbls. in the daily average when the figures are compared with those for May. The total is 142,549 bbls. greater than the total for June, 1923. The June total was divided by companies as follows: Illinois Pipe Line Co., 695,702 bbls.; Tide Water Pipe Co., 29,359 bbls.

Total deliveries by these two companies during July amounted to 528,403 bbls., the daily average being 17,613 bbls. This is an increase in the total of 17,989 bbls. and a gain of 1,148 bbls. in the daily average compared with the May figures. It is an increase of 19,265 bbls. in the total compared with June, 1923. The deliveries of each company during June was: Illinois Pipe Line Co., 474,433 bbls.; Tide Water Pipe Co., 53,970 bbls.

Total deliveries of crude oil by the pipe lines of the eastern division during June amounted to 4,290,290 bbls., the daily average being 143,010 bbls. This is an increase of 105,366 bbls. in the total deliveries and a gain of 8,013 bbls. in the daily average when compared with the figures for the previous month. The daily average is 30,588 bbls. less than the total for June, 1923. All the pipe lines included in this report showed a gain in their regular deliveries with the exception of the National Transit Co., the Southwest Pennsylvania Pipe Lines, the Lima division of the Buckeye Pipe Line Co., the Indiana Pipe Line Co., the Cumberland Pipe Line Co., the Tide Water Pipe Co., the Pure Oil Co., the Paragon Refining Co., the Indian Refining Co., and the Pittsburgh Pipe Line Co.

There was a large increase in the amount of pipe line oil held in storage by the eastern pipe lines during the month of June. At the close of the month the total was 11,544,204 bbls., a gain of 208,895 bbls. during the month. The high mark in this respect was established at the end of February, 1921, and was 11,009,293 bbls. During June the amount of Pennsylvania oil held in storage by these lines decreased 254,414 bbls. and Lima oil in storage was 6,616 bbls. less. The other grades in storage increased as follows: Lima, 36,973 bbls.; Kentucky, 76,935 bbls.; Mid-Continent, 356,016 bbls.

RAINBOW BEND SUIT TO RIVAL RED RIVER

ARKANSAS CITY, Kans., July 19.—A suit, which may rival the famous Red River case of Texas, has been filed by land owners on Rainbow Bend oil field, 9 miles northwest of this city. Governor Davis of Kansas and the Executive Council of the State are made defendants in the case, which is brought in the Federal Court at Topeka.

Ike Nason, W. E. Holmes, Silas Thurlow and A. P. Douthitt are plaintiffs and together own 6 of the 9 miles of Arkansas River land involved. The land is river accretion, silt brought down by the river and piled up during the years. Under this land may lie some of the most valuable acreage in this famous district, which within a few months has produced over 300,000 barrels of oil.

The plaintiffs contend original title was given by the Osage Indians in 1870.

FINES TOTAL $300,000

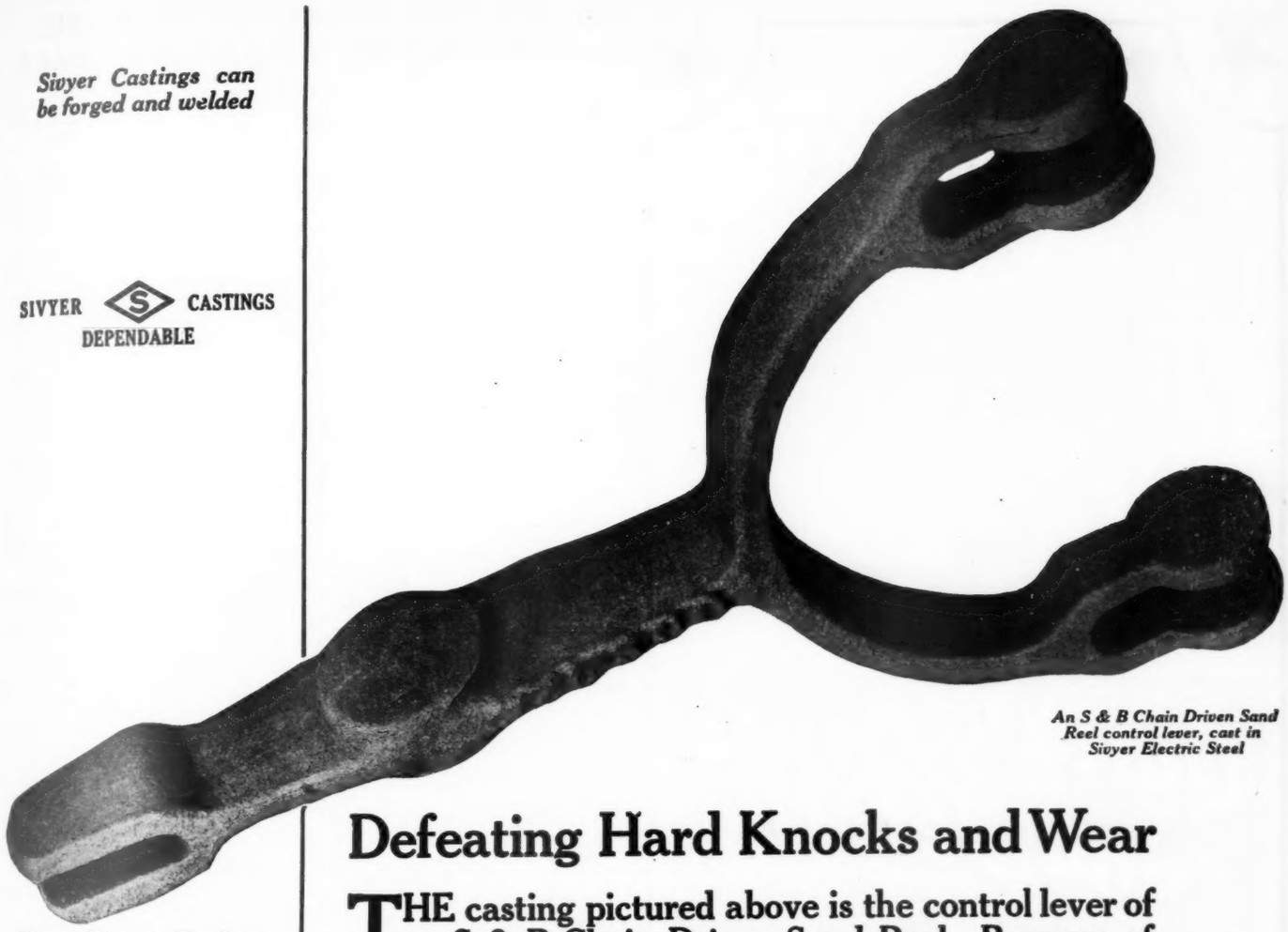
FORT WORTH, Tex., July 19.—Oil promoters' fines, forfeitures and penalties have amounted to $300,000 here since the postal drive opened by United States Attorney Zweifel in March, 1923, according to a report completed by Shelby S. Faulkner and Mrs. C. R. Mailes of the United States attorney's office.

Of the fines assessed, $100,000 has been collected.

Mr. Faulkner explained that many of the big cases are not considered terminated till all defendants are disposed of. While the fines in each have been included in the report, collections in the Doctor Cook case, Revere Co., Kelley Petroleum Co., Galloway case, and others, can not be listed till all have been closed. This would run the total collections much higher.

Sivyer Castings can be forged and welded

SIVYER S CASTINGS DEPENDABLE



An S & B Chain Driven Sand Reel control lever, cast in Sivyer Electric Steel

Defeating Hard Knocks and Wear

THE casting pictured above is the control lever of an S & B Chain Driven Sand Reel. Because of the design of the part, forging is impractical. Sivyer Electric Steel gives the lever the great strength and wear resistance that it requires. In addition, the use of Sivyer Castings for this part effects a considerable saving in machining costs. The only machining necessary is the drilling of the bosses and of the top prong. This control lever is one of eighteen cast parts supplied by Sivyer for the S & B Sand Reel. These parts are all light and most of them are of such design that forging is impractical. They have been supplied by Sivyer for five years. This, plus the fact that "The S & B reel will work an unlimited number of wells with a minimum of repairs," indicates how successfully Sivyer Steel Castings withstand the hard knocks and wear of the oil fields.

Sivyer Electric Steel to Solve Your Castings Problems

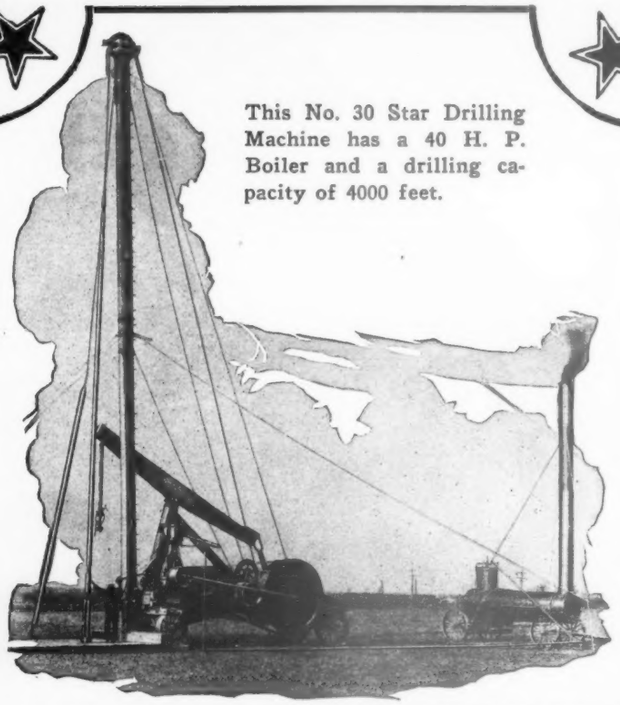
Perhaps, you are having trouble with forged parts—parts that do not give the service that you think they should—or, perhaps, your costs on forgings are running rather high. Parts of intricate or thin section design can be readily and economically cast in steel. Sivyer Electric Steel Castings are exceptionally durable and show great resistance to wear and strains. The high temperature electric furnaces, plus the excellent Sivyer annealing practice—where the castings are grouped for annealing according to the heat treatment that they require—provide a tough close-grained metal that furnishes exceptional strength and resistance to wear even under the most exacting conditions.

Send Blue Prints

If you will send us blue prints of the parts giving trouble with a statement of your difficulties we will be glad to recommend possible solutions without obligation on your part.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE



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OIL DRILLERS ARE DEFLATING GLOBE; THREATENING GREAT EARTHQUAKE?

PHILADELPHIA, Pa., July 19.—"There is very real danger New York City may suffer from an earthquake one of these days.

"Unless the world gets over its mad search for oil, there are going to be some radical changes on this planet."

These startling predictions were made by Prof. David Todd of Amherst College, professor of astronomy, internationally known scientist and author of half a dozen books and innumerable articles. Professor Todd is spending the summer at the estate of P. M. Sharpless near West Chester.

Professor Todd's observations are not based on any Sodom and Gomorrah idea of divine vengeance but are, as he points out, the result of cold scientific reasoning. New York City, he says is as likely a site for the next earthquake as any in the United States. This is because of the geological formation of the land beneath it. Earthquakes almost invariably come at a point where two strata or layers beneath the surface of the ground come together.

According to Professor Todd, it has been ascertained just such an underground joint lies beneath Manhattan Island. The pressure, which, he says, will eventually force this joint apart, is caused by the thousands and thousands of tons, which are being heaped onto the island in huge buildings.

He predicts when the earthquake finally comes the destruction will be far greater and more terrible than that following the Japanese upheaval last summer.

Professor Todd also is pessimistic over the consequences of the "oil madness" which is gripping the world.

"Did you ever see a driller strike oil?" he asked. "If you have you will get some idea of the tremendous pressure locked up in the ground. It is this pressure which holds the world in shape. With countless hundreds of oil wells tapping this pressure in every part of the globe, I dare not predict the result."

Scientists have spent considerable time guessing the result of this tapping of power. Some have predicted eventually there will be a huge collapse of the earth's surface more destructive than any earthquake the world has known. Others believe the final outcome will be a change in the climate of the earth. When geologists are asked as to the outcome, they seldom commit themselves.

"What happens when a chair is pulled out from under you?" they ask.

PENN-MEX FUEL CO. ANNUAL STATEMENT

PITTSBURGH, Pa., July 19.—The financial statement of the Penn Mex Fuel Co. for the year ended December 31, 1923, has just been issued. In connection with the financial statement George W. Crawford, the president says:

"The year 1923 was not a profitable one for the company, due to the small amount of production and unfavorable price, but the company is again marketing its production at a profitable figure.

"Wells recently completed lead to the conclusion that the company has found an extension of the so-called "Golden Lane," which, if proven, should give several miles of productive territory ahead of this streak.

"Jointly with the Transcontinental Petroleum Co., the company is also drilling on the Tessada tract in the Panuco Field, but has received encouragement from the drilling of certain wells that may make it advisable to drill several more."

The financial statement follows:

Assets—	
Property acct., producing and non-producing	$15,597,788.82
Cash and accounts receivable	627,086.10
Material and Supplies and oil and gasoline in tanks	1,047,455.88
Liberty Loan bonds	600,360.00
Stock owned and advances to subsidiaries	141,290.29
	$18,013,981.09
Liabilities—	
Capital stock	$10,000,000.00
Accounts payable	39,256.39
Deferred items due subsidiaries	135,177.23
Reserve for depreciation and depletion	2,429,839.15
Surplus and undivided profits	5,409,708.32
	$18,013,981.09

EASTERN REFINERIES ENTER CONSOLIDATION

OIL CITY, Pa., July 19.—The Wilburne Oil Works of Warren, the Valvoline Oil Works of Butler and the Edgewater Refinery have been absorbed or consolidated under one head and will be known as the Valvoline Oil Co. The company has large European connections and is now one of the largest independent refining companies in the world. W. Dixon Ellis, president of the company, founded the business some 50 years ago.

The Edgewater Refinery, which it outgrew about 25 years ago, is now used as the export terminal. The business has grown from very limited capitalization, $25,000, to a $15,000,000 concern. It owns its own pipe lines and has operated exclusively on pure Pennsylvania grade crude. Mr. Ellis says, according to Mr. Day, that as long as he lives no other crude will go through the plants of the Valvoline Oil Co. He has also maintained a selling policy of doing business direct with the consumer. The company has an extensive business on the Pacific Coast, with filling stations throughout Wisconsin, Illinois and all the New England States. One of the principal bases of supply is at New London, Conn.

KANSAS SECRETARY FOR GASOLINE TAX

WICHITA, Kans., July 19.—The next report to the State Legislature by Frank J. Ryan, Secretary of State, will include a recommendation for the enactment of a 2-cent gasoline tax on all gasoline sold in Kansas.

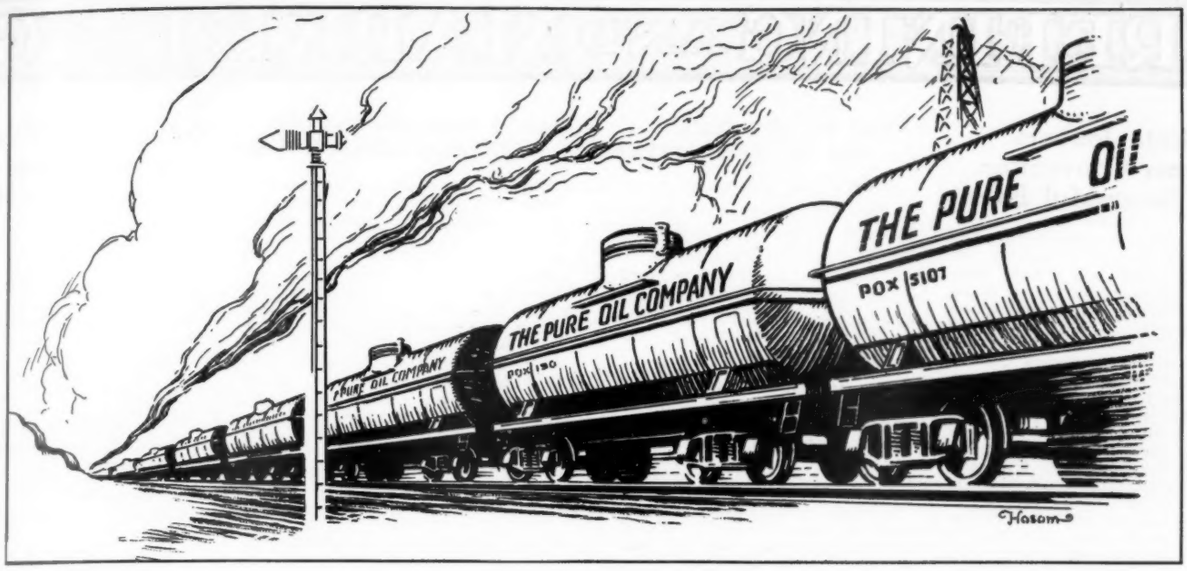
Mr. Ryan wants the Kansas law to be fashioned after that of Pennsylvania, which provides that every person selling gasoline must keep a record of all sales and make a return every 30 days. One-half cent of the tax would go to the county and 1½ cents to the State treasurer. The tax would be used exclusively for the construction and maintenance of hard surfaced roads.

"A thousand tourists a day pass through Kansas in the summer time," he said, "and use our roads, paying no tax. If they were forced to pay the gasoline tax it would mean a revenue of at least $1,000,000."

He would abolish the present benefit district system, thus saving the farmer, he said, $250 or more a year, for the maintenance of roads. He expressed the opinion that the first year of such a law would mean a revenue of from two and a half to three million dollars. The law would be constitutional under the tax amendent to be voted on this year, he said.

GASOLINE CAR OUSTING HORSE

The Society for Electrical Development has assembled the following statistics: In 1917, 108,006 horses plied the streets of New York. In 1924 this number has been reduced to 50,053. In Chicago, the reduction for the seven years, from 1914 to 1921 was from 51,942 to 26,535. Up to the present there has been no let up in the rate of decrease. Comparatively little agitation has developed for legislation, although recommendations have been made in some cities, notably New York, by prominent city officials, to oust the horse traffic.



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GASOLINE—all grades
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Philadelphia
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Tulsa, Okla.
Charleston, W. Va.
Minneapolis

REFINING AND MARKETING

So. Dakota Jobbers' Summer Convention Successful Event

The semi-annual or summer convention of the South Dakota Independent Oil Jobbers' Association, held at Lake Madison, S. D., was declared a success by all in attendance, both from a point of business and pleasure.

The discussion on the filling station differential disclosed the feeling that the tank wagon delivery price in the country should be the same as the service station price, with a differential of 2 or 3 cents to the curb pumps, this to be adjusted by advancing the tank wagon price 1 cent and reducing the filling station price 1 cent. This would eliminate to a great extent various excuses for price cutting and the criticism from the consumer that they can have gasoline delivered to them 15 miles for 2 cents less than they can get it at the station.

L. V. Nicholas, president of the National Petroleum Marketers' Association, J. H. Wolf, president of the Minnesota Petroleum Association, and Paul E. Hadlick, secretary of the Minnesota Petroleum Association, took part in the program. It was disclosed by the secretary's report that the association is becoming a strong organization through the quality of the members and their active interest.

Huron, S. D., was selected for the next meeting, to be held in January, 1925.

The program included the following: July 15—Welcome speech by C. C. Wagner, Dacotah Oil Co.; response by J. H. Cumbow, Cumbow-Lanning Oil Co.; discussion on proposed inspection law, led by G. F. Frary, of the South Dakota food and drug department; "Value of Trade Associations," Paul E. Hadlick, secretary Minnesota Petroleum Association; "The Minnesota Petroleum Association," by J. H. Wolf, president; "The Development of Oil Burner Sales by Oil Dealers" by E. L. Miller, Yankton, S. D. C. C. Wagner was toastmaster at the banquet.

At the directors' meeting the program was: "Public Demand for Service at Filling Stations," by F. A. Radamacher, St. Paul, Minn.; "Filling Station Differential," by M. R. Baskerville, Watertown, S. D.; "General Marketing Conditions" by L. V. Nicholas, president National Petroleum Marketers' Association; freight rate report by M. R. Baskerville; discussion on marketing costs and overhead, led by H. F. Brownell and Jay Sessions; discussion on legislation and general trade discussion.

WICHITA OIL MEN'S CLUB

WICHITA, Kan., July 21.—The recently organized oil men's club here, which now has more than 100 members, is doing much to cement friendship between the men engaged in the various branches of the oil industry here. Officers elected at the organization meeting are as follows: President, Paul B. Erickson,; vice president, E. C. Moriarty; second vice president, C. L. Henderson; treasurer, A. A. Buschow; secretary, James W. Jones; directors, Paul B. Erickson, E. C. Moriarity, C. L. Henderson, A. A. Buschow, A. D. Allison, Marvin Lee and G. H. Stearns.

COMPRESSION PLANT AT DUNCAN

The Gas Engineering and Construction Co. has secured a contract for the construction of a 3,000,000-foot compression gasoline plant, together with seven miles of 6-inch and 8-inch welded pipe line to be built for the Mid-Continent Oil Leasing Co. of Oklahoma City, near Duncan, Okla. Compressor machinery is to be furnished by Clark Bros. Co. of Olean, N. Y.

TEXAS TO BUY FUEL OIL ON OPEN MARKET

AUSTIN, Tex., July 19.—Fuel oil for the State institutions in Texas will be purchased on the open market, beginning Sept. 1, according to R. E. Walthall, purchaser for the State board of control, who has rejected all bids for supplying this commodity over the coming 12 months. Mr. Walthall considered all bids too high.

The lowest bidder offered fuel oil over the next 12 months to the Austin institutions at $1.67 per barrel, which is 12 cents higher than the present price under contracts made for the past year. The same relative difference exists in the prices bid for oil contracts at the other State institutions.

The State of Texas uses about 150,000 barrels of fuel oil annually. Mr. Walthall believes he will save the State a considerable sum by purchasing oil on the open market during the coming year. Many independent producers are expected to bid for the smaller purchases and he will get the zenefit of competitive prices, he explained, since the independent are not in position to make the heavy bonds for performance of the contracts.

GRAND JURY FINDS NO GASOLINE CONSPIRACY

DURHAM, N. C., July 18.—No irregularities were found in the prices now being charged for gasoline by local dealers, in an investigation made here recently by the grand jury of the Durham County Superior Court.

The grand jury acted upon the advice of Judge N. A. Sinclair, presiding judge from Fayetteville,, who urged in his charge to the jury that the alleged gasoline conspiracy be investigated and dealt with as severely as if it were a bootlegging conspiracy.

VAPOR TENSION TAKING METHOD DISAPPROVED

The executive committee of the Association of Natural Gasoline Manufacturers has disapproved the Anderson method for taking vapor tension, following the recommendation for this action by the technical committee. It was found that the use of the Anderson brass bomb would raise the vapor tension several pounds which would require an adjustment of the shipping regulations in order not to penalize the industry. Use of the Anderson method would be more expensive than the present method and might lead to many complications for the trade, according to A. V. Bourque, secretary of the association. The present bomb is an inexpensive contrivance of a small piece of pipe with simple welded connections.

CROSS UNIT FOR ENGLISH CO.

The Medway Oil & Storage Co., Ltd., Isle of Grain, Kent, England, has just placed in operation a double 1,000-bbl. Cross cracking unit with bubble towers. Russian kerosene is being used in this unit as charging stock. Dr. Walter M. Cross of the Gasoline Products Co., Kansas City, Mo., who went to England to superintend the starting up of this installation, is now on the Continent and is expected to return to the United States about August.

BUYS CHOATE REFINERY

OKLAHOMA CITY, Okla., July 21.—The property of the old Choate Refining Corp. was purchased recently from the Charles F. Noble Co., Tulsa, by R. M. Shaw of St. Louis for the Red Seal Refining Corp. of New York City. It will be repaired and put into operation soon, according to Mr. Shaw. About $200,000 will be spent immediately for improvements. A 6-inch pipe line from the Cromwell Field is contemplated.

OIL COMPANIES FILE THEIR ANSWER TO OUSTER SUITS IN NEBRASKA

OMAHA, Neb., July 19.—Affidavits from a score of officials and employes of several of the larger Nebraska oil companies, named in the suit of Attorney General Spillman to force them from doing business in this State, were filed in district court in Omaha last week to combat State affidavits that a combination to fix gasoline prices exists among the several companies.

In the main, the affidavits aver that no such combination exists; that oil prices in Nebraska are fixed according to the laws of supply and demand, and costs at refinery; and that in many instances reductions are made to meet reductions of competing companies.

C. N. Humphrey, assistant general manager of the Standard Oil Co. of Nebraska, filed the principal affidavit for his company. Mr. Humphrey said the Standard has a "regular and normal price of gasoline and kerosene in every locality in Nebraska, and this price is not established to destroy the business of any competitor." A. H. Richardson, president of the Standard of Nebraska, fixes the prices for the company's products throughout the State, but never with the view to driving any competitor out of business, states the Humphrey affidavit, and also one by Mr. Richardson himself.

Deny Consultation

The Standard's normal price is the tank wagon price, which is 2 cents lower than filling station prices, fixed to permit retailers to make a margin of profit, is the Standard's claim.

General denial is made in the affidavit that the Standard now, or ever, has consulted with other companies before fixing prices for its products.

President Richardson said that the Standard refused to sell to Don Scott of Auburn, Neb., one of the State's star witnesses, because Scott was selling at a price less than the Standard was charging at its own service station in Auburn and because "selling to Scott would cripple and destroy" its business. For the same reason the company refused to sell to the Omaha municipal station, Mr. Richardson stated.

President Richardson added that neither he nor officers of his company "have acted with any other companies or individuals to fix prices or indulged in any unfair competition, but the Standard has reduced its prices in some localities to meet competition only.

The Nicholas Oil Corp., through its treasurer and manager, Stockton Heth, declares that Mr. Heth told Ben Elrod, one of the owners of the Elrod-Howell station which cut the price in Omaha that "anybody who thought about going into the gasoline business at that time was crazy and should be in the asylum at Lincoln." Elrod had gone to Heth to ask his advice, Heth brought out in his affidavit.

Heth said he refused to sell in carload lots to the City of Omaha station and told the city representative that his company was in the business of selling at

(Continued on Page 86)

Refiners Are Victors In Anti-Trust Suits Instituted in Texas

AUSTIN, Tex., July 19.—The State's anti-trust suits against three of the largest oil refiners operating in Texas, were decided in favor of the oil companies Thursday, when District Judge George Calhoun announced judgment would be upholding legality of the "exclusive sale" contracts attacked by the State. Federal courts have passed on contracts embracing the same conditions, he said, and have held them not to be illegal. He declared the court would pass upon the question of legality of each contract separately and not on them all together. The companies are: The Texas Co., and the Gulf Refining Co., both with headquarters at Houston, and the Producers Oil & Refining Co. of Missouri, with State headquarters at Fort Worth.

The court upheld the right of the refiner to require a filling station operator to sell only the refiners products through equipment leased or rented to the retailer, whether the equipment was leased or rented was not material, Judge Calhoun ruled.

The State alleged the contracts were such as to prevent a retailer from selling other than the lessors proucts. But the oil companies contended that to protect the name and quality of their products, they required exclusive sales of them through pumps leased to the retailers; but did not prevent the retailer from having pumps of other companies or his own pumps to sell other than the companies products.

Assistant Attorney General Frank M. Kemp gave notice of appeal to the third court of civil appeals at Austin.

NEW 1,000-BBL. UNIT AT CLAYTON REFINERY

The M. W. Kellogg Co., of Jersey City, N. J., has just completed the installation of a double 1,000-bbl. Cross cracking unit at the plant of the Clayton Oil & Refining Co., Dallas, Tex., from designs furnished by the Cross-Widdell Engineering Co., Kansas City, Mo. This installation is of the latest type and includes a fractionating or bubble tower directly connected to the cracking plant from which gasoline finished as to end point, will be obtained. Construction was started in March and was completed as scheduled.

This is the second Cross installation to be made at the plant of the Clayton Oil & Refining Co.'s refinery. They have been operating a double unit with great success for the past year. The M. W. Kellogg Co. will proceed immediately to remodel the old units by the addition of bubble towers.

E. J. Mary, superintendent of the refinery, has just returned from a visit to Wood River, Ill., where he has been studying the operation of a Cross unit with bubble towers which has just been placed in successful operation there.

ARRO CO. ANNUAL MEETING

LEWISTOWN, Mont., July 19.—At the annual meeting of the stockholders and drectors of the Arro Oil & Refining Co. the following directors were elected for the ensuing year: H. H. Schwartz, Jr., Lewistown; H. H. Schwartz, Casper, Wyo.; W. R. Nichols, Tacoma, Wash.; Ed L. Allen, Lewistown; E. L. De Mers, Lewiston; L. B. Schwartz, Casper, Wyo.; George J. Wiedeman, Lewistown; Herbert A. Hover, Chicago, Ill.; Mary A. DuBois, Long Beach, Cal. The following officers were chosen: H. H. Schwartz, Jr., president; Ed L. Allen, vice president and treasurer; E. L. De Mers, secretary.

The license contracts of the Universal Oil Products Company for the use of the Dubbs Cracking Process are *in promotion of trade* and *not in restraint of trade*, especially for the independent refiner

Universal Oil Products Company
Owners of the Dubbs Process
312 South Michigan Ave
Chicago Illinois

Treatment of Water for Refinery Use

Very Important Problem in Operation of Plants, Especially in Mid-Continent. Methods Employed Vary Greatly

By Ralph T. Baker

An abundance of pure water is one of the primary factors in deciding the location for a modern refinery This feature has always been a matter of importance, and in this respect some refiners have proved wiser than others. The tombstones that mark the trail of the industry through the Mid-Continent are chargeable to many separate and distinct unwise actions. One of the most outstanding reasons for the wrecking of many refineries in this section has been the failure of the owners to provide an adequate supply of pure water for operating purposes.

Ordinary Mid-Continent surface drainage water has long been noted for its hardness. Field boilers in flush pools have suffered from corrosion and scaling to a great degree and have been rendered useless in short order as a result of the action of the water used to make steam for the drilling of wells. To the producer, this fact caused merely the addition of another charge on his books against the day when his lease would produce in gusher proportions.

But to the refiner, who put in his small skimming plant as a result of the opening of these various Mid-Continent pools, the use of this field water presented a different picture. The refiner was forced to make his boilers last a longer time. his initial investment was more and his returns were smaller than those of the producer and his margin of profit was measured in cents rather than dollars. As a result, he was forced to take every precaution to insure the permanence of his equipment and one of these precautions involved the practice of treating his boiler feed water to give longer life to his boilers and more continuous operation to his plant.

Chemical Contamination

Some refiners feel that all water used in their refineries should be treated to eliminate hardness before it is used in any phase of refinery work. Others are content with efficient treatment of the boiler feed water, observing the practice of shutting down the refinery a few days every month for cleaning the interior of the condenser boxes and scraping the coils. A vast majority of the refiners in Oklahoma observe the latter method, but there is a growing sentiment among them that a distinct advantage would accrue from treating all water used.

As has already been intimated, hard water is the cause of much of the grief attendant upon the operation of a Mid-Continent refinery. A description of water and the chemical compounds that make it hard will aid in a discussion of the troubles attending boiler operation, and afford a working basis for the drawing of conclusions regarding the elimination of the undesirable properties of the water.

Water for use in Mid-Continent refineries ordinarily has its immediate origin in some lake, river, pond or well. Because of this, it stand to reason that it has come in contact with many soluble chemical constituents during its course over and under the earth, since its precipitation as rain. The soluble chemical compounds which water absorbs during its course over and through the earth are responsible for its hardness.

To secure absolutely chemically pure water (H_2O) ordinary water must be distilled in clean vessels in such a manner that it will receive no contamination, even from gases. It is easy to see then that all natural waters will be more or less contaminated. The same may be said of rain water, as it has been demonstrated that rain washed the dust and gases, including carbon dioxide, from the sky. Water falling several hours after the initial raindrops of a continuous downpour is known to be much nearer absolute chemical purity than that which fell during the earlier stages.

Soluble Minerals

Hard waters show the presence of soluble minerals gathered up by the water after it has reached the earth. Hardness is a characteristic given to water by the presence of soluble salts of calcium, magnesium, iron and aluminum. Water softening, then, is the process of removing the hardening ingredients from water and is generally accomplished by the use of chemicals which precipitate these ingredients in such a form that they may be removed from suspension by mechanical means.

Natural soft waters are a rarity, even spring water having absorbed considerable hardening material in its course through rocks. Relatively soft natural waters are secured, however, where the course of the water has been through channels which have afforded little contamination from objectionable chemicals. Such waters are scarcely ever found in the rivers and ponds of the Mid-Continent refining area and it is upon such sources that Mid-Continent refiners are forced to depend for their water supplies.

Among the various chemical compounds found in hard water are those dissolved by the water itself and those dissolved through the action of the absorbed carbon dioxide gas which combines with the water and forms carbonic acid. The principal ingredients dissolved or retained by the water are as follows: Calcium sulphate, calcium chloride, magnesium chloride, sodium sulphate, sodium chloride, sodium bicarbonate, organic matter and small amounts of silica, usually in combination with alumina. At times inappreciable amounts of calcium nitrate, magnesium nitrate and sodium nitrate are found also.

Principal Ingredients

The principal ingredients dissolved by water containing carbon dioxide gas are calcium carbonate and magnesium carbonate, which, though practically insoluble in pure water are converted into their respective bicarbonates and rendered soluble through the action of the carbonic acid, iron and aluminum carbonates, hydrogen sulphide and occasionally acids.

In addition, refiners are forced to keep a constant watch for suspended matter, such as mud, and various kinds of organic matter, depending upon the location of the plants. Oil is often present, being introduced through the use of open feed water heaters and jet condensers. It is found as free oil or emulsified oil.

For the purpose of comparing the degree of hardness it is common practice to speak of the quantity of hardening ingredients present in industrial water as being caused by carbonate of lime alone. The custom in the United States is to report the hardness in degrees, each degree representing one grain of equivalent calcium carbonate per U. S. gallon of 231 cubic inches. One grain of calcium carbonate is equivalent to 1.36 grains of calcium sulphate; 1.10 grains calcium chloride; 0.84 grains of magnesium carbonate; 1.20 grains of magnesium sulphate, and 0.95 grains of magnesium chloride. Other unit values are used in other countries to designate the degrees of hardness of the waters.

Hardness Classified

Hardness is generally classified under the heads of temporary hardness and permanent hardness. Temporary hardness is that part of the total hardness which is precipitated from solution by boiling. It is often mistaken for the amount of calcium and magnesium bicarbonates present, when in realtiy it represents only the larger part of the calcium carbonate and a part of the magnesium carbonate. Permanent hardness is that part of the total hardness which is not precipitated after boiling. It represents the sulphates, chlorides and nitrates of lime and magnesia as well as the part of the carbonates of lime and magnesium not precipitated at the boiling temperature, which were held in solution in the water. As a result of the bicarbonates of lime, magnesia and soda, a decided alkalinity often is given the water, which is expressed in terms of the equivalent calcium carbonate per U. S. gallon. With acid present in water, the degree is shown in negative calcium carbonate per U. S. gallon, to indicate the grains of calcium carbonate required to neutralize the acidity present.

A quick field test of the hardness of water can be made by means of a standardized soap solution. The salts in solution in the water which cause hardness also destroy soap. The addition of soap to water, which then refuses to lather is a quick means of ascertaining whether or not that water is hard. The amount of soap solution necessary to neutralize the compounds causing hardness so that lather may be formed is a means for giving an index as to the relative hardness of the water. In other words, if a relatively small amount of soap solution is necessary for producing lather, the water is relatively soft, while if a large amount of soap solution is necessary, the water is hard.

Softening Process

The process of removing this soap-destroying power or water hardness is called softening. As a general rule, refiners, who will be forced to use their water for many years, should secure a complete quantitative analysis of the prospective water, regardless of the results of the field tests by means of soap solution. From an accurate quantitative analysis, the method and cost of proper treatment for the water can be ascertained.

For the removal of different chemical compounds, a variation in treatment often is necessary. Calcium and magnesium carbonates are precipitated from the water by the use of caustic alkali. The bicarbonates of iron and aluminum are precipitated in the same manner as calcium carbonate. Calcium sulphate, calcium chloride and calcium nitrate are precipitated as calcium carbonate by the use of soda ash (sodium carbonate). Lime and soda ash are necessary to remove magnesium sulphate, chloride or nitrate.

Soft water should not contain any sulphates, chlorides or nitrates of either magnesium or calcium. Small amounts of silica and iron and aluminum oxides generally remain in solution in the water.

A recital of the various chemical compounds dissolved in the ordinary water to be used in boilers, shows the refiner the reason for the deposition of the various kinds of heavy precipitates found in his boiler, following its continued use. It is a matter of common knowledge that the Indians were accustomed to obtain their salt by boiling to dryness a large amount of salt water. The water evaporated leaving as a solid the sodium chloride and other minerals formerly held in solution.

The same is true in the case of the ordinary boiler. Constant evaporation of water within the boiler causes constantly increasing amounts of the salts to gather in the water which is limited in quantity. The result is that as the concentration of the salts increases some of the salts finally are forced out of solution and are deposited within the boiler in the form of scale. The formation of this incrustation is gradual and is in direct proportion to the amounts of the scale forming materials contained in the water.

At times, however, a sludge is formed, which remains suspended in the boiler water, tumbling over and over, and often causing additional complications. Secondary chemical reactions often take place between the chemicals in suspension and the scale deposits, leading to the formation deposits of another nature. A large portion of the magnesium and lime salts which are precipitated, remain in suspension in the water and can be removed by blowing off the boiler occasionally. Chief among the ingredients causing scale are the following: Calcium carbonate, calicium sulphate, magnesium carbonate and magnesium sulphate. The character of the scale varies with its chemical composition, and it may be found in an amorphous or crystalline state, with or without the presence of sludge.

Menace of Scale

The presence of scale inside a boiler contributed in many ways to the inefficiency in operation which has sounded the death knell for many refiners and which continues to menace the life of others. A few of the reasons for avoiding scale and prohibiting its deposition should be considered here. Scale varying in thickness up to ⅛-inch causes a heat loss varying from an insignificant amount up to as much as 10 or 12 per cent. The loss increases with the thickness of the scale. The mechanical structure of the scale is of as much or more importance than the thickness in the production of this loss. The chemical composition, except in so far as it affects the structure of the scale, has no direct influence on its heat-transmitting qualities.

The cost to the refiners in using unsoftened scale-forming water in their boilers is represented principally by the following items: Extra fuel consumed due to scale insulation; cost of extra boilers to make up for limitations on boiler capacity imposed by the scale-forming water; cost of extra boilers to provide for needs in cleaning those ordinarily used; cost of cleaning, retubing and repairing boilers; cost of firing boilers put out of service for repairing and cleaning; depreciation on boilers, shorter life due to hard water, and cost of boiler compounds, where used.

Running a close second to scaling is the attendant evil of corrosion, caused in part by the presence of undesirable matter in the boiler feed water. Corrosion, together with pitting and the deposition of the oxides of iron inside the boiler, is due largely to the presence of soluble salts in the water which create a chemical reaction when brought into contact with the metal of the boiler. Calcium and magnesium chlorides and nitrates are undesirable components of boiler feed water because of this reason. The presence of carbonic acid in the water acts as an oxidizing agent in the production of the various ferric oxides produced in the formation of rust and in pitting. In addition, a certain amount of corrosion at times may be traced to electrolytic action.

Along with scaling and corrosion are

(Continued on Page 116)

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Vogt Stills were ordered

SPECIFICATION

Size — 10′ dia. x 60′ long

Plate Thickness — ⅞", 1" and 1⅛"

Rivets — 1¼" swelled neck

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WHOLESALE DEPARTMENT

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GENERAL REDUCTIONS FEATURE EAST FOLLOWING PRICE-CUTTING WAVE

By N. O. Fanning

NEW YORK, July 21.—General reductions in the tank wagon price of gasoline throughout the Atlantic Seaboard featured the eastern refined oil markets during the past week. The Standard Oil Co. of New Jersey inaugurated the decline, cutting prices 1 cent throughout its territory, followed by a later reduction of ½ cent to 1 cent and the Atlantic Refining Co. and the Standard Oil Co. of New York followed in order. The Texas Co., Gulf Refining and other marketers in general followed these three companies.

The reduction in prices followed an outbreak of price cutting in various parts of the territory. In some cities in northern and central New York independent dealers cut the retail price as low as 12 cents per gallon. This cannot be taken as a representative price, however, as the supply sold at this level was said to be small. In most of the cities of New York State 17 and 18 cents were the prevailing tank wagon prices, following the reduction by the Standard Oil Co. of New York.

New York City has been noticeably free from destructive competition in gasoline. The tank wagon market was reduced 1 cent by the Standard Oil Co. of New York, dropping from 20 to 19 cents per gallon. Service stations are generally asking 22 cents. Spot gasoline is nominally quoted at 13 cents, but little is being offered.

Kerosene remained unchanged in all but the territory of the Standard Oil Co. of New Jersey, which cut the price 1 cent from New Jersey south to North Carolina. In South Carolina it reduced the tank wagon price ½ cent.

Exports Decline

Exports from New York were slightly lower last week.

The following table shows principal exports of petroleum products from New York harbor during the past three weeks:

	Week Ended		
	July 16	July 9	July 2
Gasoline:			
Bulk (gals.)	1,869,431	1,259,280	4,883,469
Cases	221,048	206,988	249,345
Kerosene:			
Bulk (gals.)	.....	2,462,429	5,517,824
Cases	419,000	307,200	296,398
Fuel oil:			
Bulk (gals.)	397,320	.....	.....
Gas oil:			
Bulk (gals.)	806,400	.....	.....
Lubricating oil:			
Bulk (gals.)	256,620	14,646	9,509
Lubricating grease:			
Barrels	.....	1,000	4,600
Cases	.....	.....	1,137
Paraffin wax:			
Pounds	492,800	550,000	369,600
Crude oil:			
Barrels	1,942	4,076	.....
Petroleum asphalt:			
Barrels	.....	.....	1,800

The reported revolution in Brazil has apparently stimulated the demand for gasoline and kerosene in that country. Shipments from New York there have been unusually heavy during the past two weeks. During the week ended July 16 shipments included 69,800 cases of gasoline and 93,551 cases of kerosene.

Exports from New York to Australia are also continuing heavy. A large consignment of kerosene to Persia, amounting to 188,900 cases, was shipped during the past week.

Oil Receipts

Oil receipts at Atlantic Coast ports averaged 629,000 barrels during the past week. Receipts from the Gulf Coast were a record, averaging 353,000 bbls. daily, while those from California continued low, averaging only 99,000 bbls. Receipts from Mexico and Trinidad averaged 177,000 bbls. daily.

The following table shows estimated daily average receipts of crude and refined oil at Atlantic Coast ports by water from the Gulf and Pacific Coasts of the United States, and imports for the last three weeks; also monthly record since January 1, last (figures in barrels):

	Week Ended		
	July 16	July 9	July 2
Gulf Coast	353,000	318,000	278,000
Pacific Coast	99,000	80,000	77,000
*Imports	177,000	67,000	188,000
Total	629,000	465,000	543,000

Monthly Averages	Gulf	Pacific	*Imports	Total
July	302,000	133,000	136,000	571,000
May	276,000	122,000	144,000	542,000
April	262,000	143,000	123,000	528,000
March	201,000	137,000	130,000	468,000
February	174,000	175,000	108,000	457,000
January	127,000	159,000	79,000	365,000

*Imports largely from Mexico, but also from Trinidad and Peru.

OIL COMPANIES FILE ANSWER TO OUSTER SUIT

(Continued from Page 82)

retail and in tank wagon lots only. Heil said he referred this representative to the concern from which the Nicholas company purchases its gasoline.

Other companies filing affidavits were Shaffer Oil & Refining Co., Sinclair Refining Co., Anderson-Johnson Co., The Texas Co., and National Refining Co.

"Mystery" Gasoline Station

Among the affidavits filed on the last day were those of G. A. Steele, vice president and general manager of the Manhattan Oil Co., and Charles M. Sutherland, secretary-treasurer of the Nebraska Independent Oil Men's Association. Both men were mentioned in Attorney General Spillman's affidavits in connection with the "mystery" gasoline station.

Sutherland, after outlining his duties in connection with the Oil Men's Association, which "functions as an information bureau regarding business changes, formation of new companies, trade policies, and to foster a cooperative spirit among distributors and marketers of petroleum producers," says he one day noticed excavation being made for an oil station and that he stopped to investigate. There he was introduced to H. M. Michel, the manager of the new station. Sutherland has been accused, in affidavits now on file, with having attempted to intimidate Michel into not opening his new station.

"I have carefully read the affidavits," says Sutherland's statement, "and his 'statement of facts' as he sets them forth as follows are false and untrue. I never stated to him that 'if you open a cut-price station here, it won't do;' nor did I say in answer to one of his questions, 'You know we are spending millions of dollars through the city—we are spending a lot of money on our stations and you fellows go around and put tanks in here and cut down expenses and kill the gasoline business. We won't stand for that.' Nor did I say: 'If you've got the money to lose, go ahead and open up, but you will never be able to open that station. We are not only going to stop you, but we are going to get an injunction against this place and stop the railroads from placing any cars here. I am getting $350 a month to do this. I will tell you, you had better become a regular oil man.'

"All this testimony is untrue," continues Sutherland's affidavit. "I never in any manner threatened him nor used any coercive language. Upon no occasion, and at no time, did he order me from the premises or warn me to keep off."

Mr. Steele, who is vice president of both the Omaha Petroleum Club and of the Nebraska Independent Oil Men's Association, states in his affidavit that the only purposes of those organizations are to "create good will among the oil trade."

Steele continues and swears that he never threatened to "open a mystery filling station and sell gasoline at 13 cents for the purpose of killing off Nichel's business," or that he would "stop Michel in the running of his oil station."

"I had a conversation with Michel at Michel's request and did not know he had concealed two reporters to entrap me into saying something that by twisting around could be used against me. I positively state that I had no purpose or intent to do any wrong or improper thing or in any way to violate the law or create in any manner any unfair competition or unjust discrimination."

H. F. Heil, Cleveland, Ohio, treasurer of the National Refining Co., also filed an affidavit generally denying allegations contained in Attorney General Spillman's antitrust oil suit.

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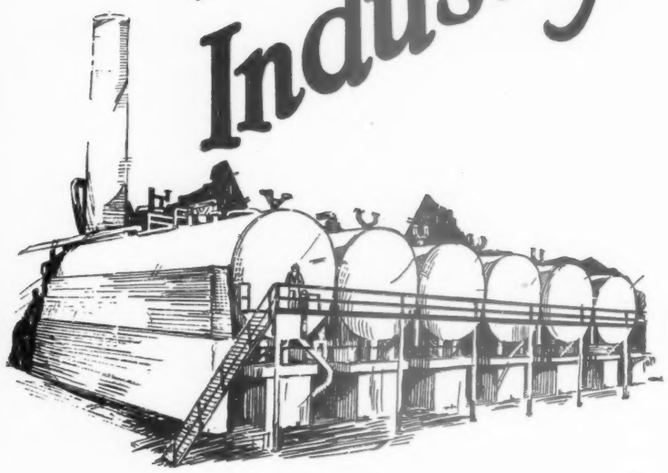

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TANK WAGON CUT DISAPPOINTS CHICAGO

Marketers Complain It Leaves Them With No Basis for Doing Business. Price Cutting Epidemic Involves Practically Entire Territory. Fear of General Reducton Halts Buying From Refiners

By John B. Waldo

CHICAGO, July 21.—To say that the local trade was bitterly disappointed in the reduction made by the Standard Oil Co. (Indiana) in its tank wagon scale, is expressing their feelings very mildly. Some would actually not believe it. One prominent oil man said it could not be so for he had driven to a Standard Oil station on his way to business Friday morning and the price was still 19 cents. When told that there was no local reduction in the filling station price because that price had been reduced 1 cent from the regular list as established at the time of the last general change over the territory and the reduction of July 18 only applied to points where there had been no such reduction, he simply gasped and finally said, "then there are mighty few places where the new prices apply as there are very few points where there has been no reduction."

This sums up the situation. For a while the price cutting was most extensive in the western part of the territory. The epidemic spread to the northern parts and then gradually crept south and east until it has involved practically all parts of the territory of the Standard Oil Co. (Indiana) although the southern parts of Illinois, Indiana as a whole, and a large part of Michigan have been comparatively free from the disease. However, there has been a lot of price cutting in Ohio and lately this has spread eastward until some of the lowest prices for gasoline have been quoted in New York State; 12 cents at Albany may be mentioned as a bad example.

What Tank Wagon Represents

There is a rather radical difference between what the tank wagon price represented a few years ago and for the last couple of years. Formerly the tank wagon list represented the selling price of the Standard Oil Co., from its tank wagons in quantities based on its costs which were largely determined by the prices which the company paid for a large part of its stocks of gasoline and other products. It did not refine sufficient gasoline and kerosene to supply the demand of its distribution and contracted for a large part of the output of certain Mid-Continent refiners as well as purchasing extensively in the Mid-Continent market. Since its acquiring of the Midwest refinng plants and enlarged output of its own refineries, it has ceased to be a buyer to any extent in any field and naturally bases its prices on its costs to refine, which do not fluctuate as did the Mid-Continent refinery prices.

The main element of cost that is subject to change today in the Standard's list of expenses to operate is the price it pays for its crude. The bulk of this supply still comes from the Prairie Oil & Gas Co., and naturalty a change in the price of the Prairie's crude affects the prices of the Standard Oil Co. The head of the Standard Oil Co. (Indiana) has repeatedly stated that its selling prices are based on refinery costs plus freight and distribution costs and a small profit. They are not based on the cost of refined products to other distributors from independent refiners, except so far as the Standard chooses to meet any competition that may result from lower prices in the independent industry. This fact, and the writer believes that it explains much in the present condition in the industry, must be considered in any thought about the tank wagon price as listed by the Standard Oil Co. (Indiana). Its normal price is the price based on the cost at the refinery. Any change from that price represents the pressure of a local competition that is based on the fact that the independent refiners are selling at less than a parity with the refining costs of the Standard organization, either because of competition or from choice.

Dilemma of Jobbers

What the Chicago marketers and the country jobbers object to is that the present plan does not give them any basis on which to do business except a changing list of Mid-Continent refinery costs. There is no way that under the present position the price can be quickly stabilized. Apparently the only thing to do is for the jobber to buy as cheaply as he can and meet any competition that threatens his gallonage. There were a considerable number of jobbers who had marginal contracts based on the tank wagon market but with the decline of refinery prices these contracts have proven unsatisfactory to many and they have been striving to get away from their contracts or else to make the contracts more valuable to them by forcing a decline in the tank wagon price.

Reports have been circulated that the Standard Oil Co. was about to make a reduction of anywhere from 3 to 4½ cents in its general tank wagon list. Fear of such a reduction which might not only seriously affect the refinery market but would automatically reduce their costs under the contract system, has caused the jobbers to refrain from purchasing gasoline which they might buy at a price that would entail a loss if the reduction in tank wagon prices was made. The result has been almost disastrous to a considerable number of refiners as they have been unable to secure buyers for their gasoline output except at a price which would insure the purchaser against a loss should the tank wagon be reduced. Today the jobber, unconvinced and apparently not to be convinced that there is a change in conditions which makes a market based on the tank wagon price of the Standard Oil Co. (Indiana) almost impossible, is still holding back his orders waiting for further declines in crude or further cuts in tank wagon prices.

July Consumption Record

In the meantime the public, mostly unconscious of the state of affairs in the petroleum industry, is serenely using its motor cars more than ever before. Reports of the business done in June show a real drain on gasoline stocks and unless the writer is thoroughly misinformed the July consumption is substantially ahead of last month as well as of last July. There is no possibility of a shortage in gasoline stocks this season. A decrease in stocks in storage is still dependent on the conservatism of the refiners. If they will slow down all that they possibly can in their refining activity and let the consumption decrease the supplies on hand the stocks will be reduced to a point where they will not be a burden when carried over to another year.

There are several refiners that have closed down their plants recently, although some had a large distribution of their own, and will purchase their supplies in the market as needed, convinced that by so doing they can make more money than if they continue to operate. A case in point is that of the Standard Oil Co. (Kentucky). That company has but a 5,000-bbl. refinery, but as soon as it found that it could purchase more cheaply than it could refine it shut down its plant and has made a lot of extra money by purchasing the gasoline that it needed. A local refiner was advised by the writer to do the same thing months ago. He is doing it this week and he estimates that if he had done it several months back it would have made

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a good many thousand dollars to the credit of his profits. It is even stated that the Standard Oil Co. (Indiana) has considered some reduction of its refining activities but believed that its employes must be considered first. The number of these is so great and their replacement would be so difficult that the thought could not be seriously entertained.

Market Much of a Guess

Following the announcement of the crude decline by the Prairie Co., and the tank wagon change by the Standard, the market was very dull and uncertain. The usual asking prices were 8 cents for 450 end point gasoline and 8¼ cents for New Navy. About the only business done during the last two days of the week was the filling of rush orders from jobbers who were nearly out of gasoline, so nearly that they could not wait for refinery deliveries but must have cars diverted. In some cases the demand was for delivery within 24 hours. This has been a great chance for the few nearby plants and for those who had cars of gasoline rolling. Some paid as high as 9 cents for quick delivery. How much they gained by waiting is a question. But there has been much complaint of slow deliveries by some refiners who have been from a week to 10 days behind in their shipments. At the present writing the market is very much of a guess. The demand is for the so-called straight run goods and blends, as such have been slow sellers. The higher tests have been in fair demand but rather easy in price. Natural gasoline is steady.

Kerosene has moved steadily and even now is rather firmly held. The demand is very largely for the 41-43 gravity. The tractor seems to be largely responsible for the steady consumption of kerosene. Offers are fair and the market is in as satisfactory a condition as it is possible for it to be with prices at their present level.

Fuel oil is moving in the same restricted way so far as new business is concerned that it has been for some weeks. The demand is or small lots and contracts are not being made or renewed for that matter, as a general thing.

The marketers report that supplies are firmly held at 75 to 80 cents. Smackover crude is being drawn to the South and the supplies for this territory are ample but not excessive, so are firm and higher than refined oil.

Gas oil is quiet with the demand so diffident that some sales have been made here at Group 3 costs just to keep things going. The costs have been 2¾ cents and that was about as high as the selling price would go with buyers acting as if they did not want any gas oil any way. There seems to be little doubt in the minds of many marketers that the nearby refiners are taking advantage of their low freights and underselling the Group 3 plants, although the managements deny they are doing business at less than the market as based on costs in Group 3.

An occasional order for a few cars or even a car of road oil is received, but the business is over for the season except filling the contracts. The refineries are trying to close up the business and prices are a little lower for what is left. Most refiners that have any quantity of road oil business have a special sales department and last year they made early starts. Some of the plants were sold out by the end of December and, while it used to be said of this early business that December sales did not hold but had to be made over during March this year, they seem to have been stable.

Tank Wagon Tangle

The change in the tank wagon scale has made no difference with the situation in the country. In the northwest the price war is very severe. In the northwest the price war is very severe. In one point the tank wagon is less than the cost of gasoline delivered. At another the jobber told the writer that after paying the freight there was just 1 cent a gallon left on which to do business and make a profit. The trouble seems to be spreading and Michigan, which has been quite clean as a whole, is now being inoculated with the cut-price virus. Some of the refiners and marketers are striving to prevent these reductions in prices below a profitable level and in some cases have gone to the point where trouble threatened and called meetings of the interested oil men and arranged a truce if not a lasting peace. The trouble is that the news that gasoline is cheaper in some neighboring town spreads to the surrounding towns and the motorists will take every opportunity to run over and fill up at the cheaper price. On many occasions it is a good deal like a housewife spending 14 cents carfare to save 2 cents on a purchase, but she gets an opportunity to see what is going on downtown and the motorist gets a view of the scenery. It is evident that so long as the refiners' prices are so low there is nothing to prevent the distributors from following them down.

The Hawkeye Oil Co., of Waterloo, Iowa, resents the impression that has been broadcast that they are price cutters and have been leading the prices downward in their territory. H. C. Wuester, secretary of the organization, was in Chicago during the week and stated that in no instance had his company been the first to make the cut. He said that for 15 years his company had stood for regular prices and had leaned over backward recently to maintain its prices in the face of persistent and flagrant price reductions. In every case where there had been a reduction reported by an agent of the company in any locality they insisted on having in their main office documentary evidence in the shape of the ticket of a competing company showing that a lower price than the Hawkeye Co.'s had been made before they would authorize a price reduction. The standing of the company regarding the holding of prices had been vouched for by the leading independent oil companies of the State. Mr. Wuester further stated that the organization had made no changes in the methods employed to secure business, those at present followed being the same as they had had introduced and practiced for the past seven years.

COMMERCE COUNSEL RETAINED BY W. P. R. A.

P. A. Conway, former commerce counsel and traffic manager for the Western Petroleum Refiners Association, has entered private legal practice, with offices at 504 Cosden Building, Tulsa, effective Monday, July 21. Mr. Conway has been retained as commerce counsel for the Western Petroleum Refiners Association to represent it in such cases as the association may be interested.

AMARILLO REFINING CO. SUCCEEDS ALLEN CO.

AMARILLO, Tex., July 21.—The Amarillo Refining Co. is the new name for the Reece S. Allen Co., which erected a refinery here about two years ago. Reece S. Allen of Wichita Falls, is president and general manager. His principal associates are L. V. Jackson, who formerly was with the Texhoma Oil & Refining Co. of Wichita Falls, and W. D. Gwynn, formerly with the Wichita Valley Refining Co. at Iowa Park.

This refinery is to get its crude oil from the Panhandle Feld where it is said a supply of 120,000 bbls. is above ground. It will be run through the line of the Pan-Tex Pipe Line Co. now being laid under direction of Dorset Carter of Oklahoma City. The plant has a daily capacity of 5,000 bbls. The management expects to run a minimum of 3,000 bbls. after it is put back into operation.

REMODEL PETROLIA PLANT

PETROLIA, Ont., Canada, July 18.—The Canadian Oil Refineries, Ltd., is building a new chimney and is reconstructing the tar stills at its refinery here.

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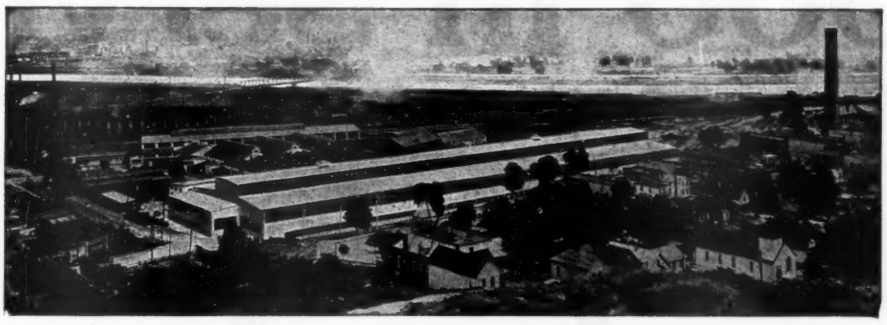

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N. LOUISIANA-ARKANSAS

(Continued from Page 50)

The Standard Oil Co. is moving in rig for No. 6 McDade in Section 16-20-11, northeast of the Elm Grove gas district.

Woodley & Collins are drilling in chalk rock at 2,195 feet, in No. 1 Hamilton, Section 16-20-11, on the north shore of Bodcau Lake.

De Soto Parish

The Greyhound Syndicate set 10-inch casing at 200 feet in No. 1 Pollock, Section 36-11-14, 1 miles northwest of Logansport.

A. H. Tarver is drilling at 1,700 feet in No. 3 Matthews, Section 32-12-11, in the southern extension of the Bull Bayou district.

Grant Parish

The Grant Parish Petroleum Co. is drilling in broken lime at 1,485 feet in No. 1 Ball, Section 1-7-1w, between Alexandria and Winnfield.

La Salle Parish

The Bur Ban Oil Co. is drilling at 1,000 feet in No. 2 Urania, Section 21-11-2e, 5 miles north of Urania. The Stovall Drilling Co. tested salt water with no showing of oil or gas in No. 2 Louisiana Central Lumber Co., Section 27-10-2e, and the well is closed down at 1,377 feet. The Urania Petroleum Co. is drilling at 245 feet in No. 4 Urania, Section 20-10-2e.

Lincoln Parish

Buckner and others are running core barrel in hard rock at 1,050 feet in No. 1 Barrett, Section 13-20-3w, 13 miles southwest of Farmerville.

Ouachita Parish

The Atlas Oil Co. drilled to 4,155 feet in No. 2 West Virginia Timber Co., Section 3-18-5, and is now trying to plug off the salt water to test for gas at 2,300 feet. The Cosmos Carbon Co. is drilling at 2,150 feet in No. 1 fee, Section 6-19-5.

The Ouachita Natural Gas Co. is rigging up to drill No. 3 Trezevant in Section 40-20-4; the Palmer Corp. set 12½-inch at 155 feet in No. 1 Grayson, Section 12-19-4 and 10-inch at 165 feet in No. 2 Lieber, Section 4-19-5, and the Southern Carbon Co. has five rigs running on fee land.

The Standard Carbon Co. is drilling at 100 feet in No. 1 Gayle, Section 18-19-5; The Texas Co. at 1,600 feet in No. 1 Ladel, Section 2-19-5, the United O. & N. G. Co. at 2,150 feet in No. 1 Cole, Section 36-20-4, and the West Virginia Oil & Gas Co. at 1,575 feet in No. 4 fee, Section 4-18-5.

Morehouse Parish

The Amalgamated Oil Co. is drilling at 2,130 feet in No. 2 Southern, Section 53-20-4e. The Humphreys Carbon Co. set 6-inch at 2,205 feet in No. 1 Spyker, Section 17-20-5. Ladel and others set 12½-inch casing at 197 feet in No. 1 Feazel, Section 22-20-5. The Natural Gas Producing Co. is testing at 2,245 feet in No. 4 Snyder, Section 34-20-5.

Union Parish

Another failure in the Oakland district in the north end of Union Parish tended to discourage drilling in this territory, but there are still a few tests to be heard from.

Davidson & Palmer are drilling in lime at 1,080 feet in No. 1 Frost Johnson Lumber Co., Section 17-23-1e.

Frankel Brothers are rigging up to drill No. 1 T. D. Brazile, in Section 30-23-2w, 13 miles west of production.

Johnson and others are drilling in hard rock at 1,025 feet in No. 1 Pryor estate, Section 35-22-2w, 10 miles southwest of production.

The Texas Co. set 10-inch casing at 900 feet in Grayling Lumber Co. B-1, Section 32-21-4w, in the east edge of the parish, 10 miles west of Bastrop.

West Carroll Parish

The Arkansas Fuel Co. set 10-inch casing at 1,090 feet in No. 1 Fiske, Section 8-21-10e.

Ouachita County, Stephens Field

The Gulf Refining Co. set 10-inch casing at 62 feet in No. 2 Bettie Hall, Section 31-15-19, and the Ohio Oil Co. is arranging to pump No. 1 Bettie Hall, same section, at 2,165 feet.

Columbia County, Stephens Field

The Amerada Petroleum Corp. is reaming to bottom at 2,215 feet in No. 1 Baker-Joiner, Section 2-18-22; Atlantic Oil Producing Co. set 6-inch at 2,010 feet in No. 4 Murphy, Section 14-15-20, and is rigging up to drill No. 6, same section.

The Magnolia Petroleum Co. is arranging to test 16 feet of sand at 2,168 feet in No. 1 Rinehart, Section 36-15-20. Virgil Heath's No. 1 William, Section 1-19-21, is shut down at 1,200 feet.

Nevada County

The Autry Oil Co. set 6-inch casing at 1,143 feet in No. 2 Womack, Section 10-14-21, and the Kenark Oil Co., is drilling at 950 feet in No. 1 Honea, Section 12-13-21.

Arkansas Wildcats

Calhoun County

The Arkansas Fuel Oil Co. is running core barrel at 2,223 feet in No. 2 Childress, Section 1-15-15.

Grant County

The Texas Company is drilling in gumbo at 1,515 feet in No. 3 Chicago Land & Timber Co., Section 18-6-13.

Hempstead County

G. W. Simmons, trustee, tested dry, with no showing of oil or gas, at 2,700 feet in No. 1 Adams, Section 36-12-27.

Little River County.

Gaines and others are drilling at 2,750 feet in No. 1 Goodrun Timber Co., Section 15-13-29.

WYOMING FIELDS

(Continued from Page 52)

wells, but the Midwest does not control the whole of Salt Creek so this feature is only operative on a small part of that field. In the Wellington Field the Union Oil Co. controls practically the whole structure and therefore will be able to operate the field as a whole rather than try to produce a small part only against the inroads made by adjacent holders.

The next well to reach the sands in Colorado is expected to be the Union Oil Co.'s in the Wellington structure and this well and same firm's well on Fort Collins Dome are expected to be completed by the early part of next month. These will be the first wells to reach the deep sands since the discovery well was drilled last fall on the Wellington structure that started all the work in the Colorado fields. The Transcontinental and one of The Texas Co.'s wells in the Moffat Field are also at interesting depths, but have considerable to go before they will open the Dakota sand, although it will be recalled that the discovery well near Craig found some oil in the shale of the Frontier formation and the two deepest wells in the Moffat Field are now about where this upper oil was found in the discovery well.

The Ohio wildcat on the Haystack structure near Boulder is at 3,200 feet and the Leidecker well in Las Animas County is at 3,790 feet. Both these wells may find sands that are productive at any time now.

Shipments by Indiana

The Standard of Indiana sent out of Casper during the month of June, a total of 11 trainloads of gasoline for export to France via Baton Rouge, La. These shipments carried 6,600,000 gallons of gasoline.

The Continental Supply Co., with headquarters for the Rocky Mountain region at Casper, has established a branch store at Kevin for the Sunburst Field.

The Mutual Oil Co. completed a producer in the Cat Creek Field in Montana that started off at 50 bbls. from 1,200 feet in the first Kootenai sand. The same company has sidetracked the lost bit in the Wallace Dome wildcat drilling south of Waltman in Natrona County, Wyoming and the hole is now at 435 feet.

The Illinois Pipe Line Co. has about completed taking up the 4-inch pipe line from the Sunburst Field to Sunburst,

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	Type PB		Type PW	
Part—	Size	Wt. Lbs.	Size	Wt. Lbs.
Shaft	5" dia.	250	5 13/16" dia.	450
Base		520		650
Wheel Hub		360		1120
Wheel		2392		3438
Lower Spokes	7/8" dia. 8 used	19¼	7/8" dia. 12 used	25½
Upper Spokes	3/4" dia. 16 used	13	3/4" dia. 24 used	17½
Angles	2½x2½x5/16 8 used	46¼	3x3x5/16 12 used	68
Strain Rod	1⅛" dia.	92	1½" dia.	220
Upper Eccentric	20" stroke	840	24" stroke	1780
Lower Eccentric	20" stroke	860	24" stroke	1860
Binding Bolts	2" dia.	36	2" dia.	47
Bronze Bushing	5½x7 11/32	18	6 7/16x10⅛	50
Bronze Bearing Plate	14" dia. x ¼"	11	19" dia. x ⅜"	28½

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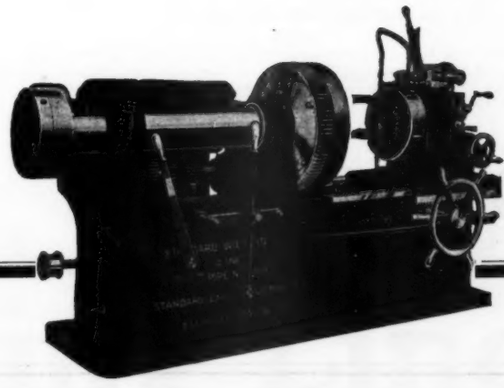

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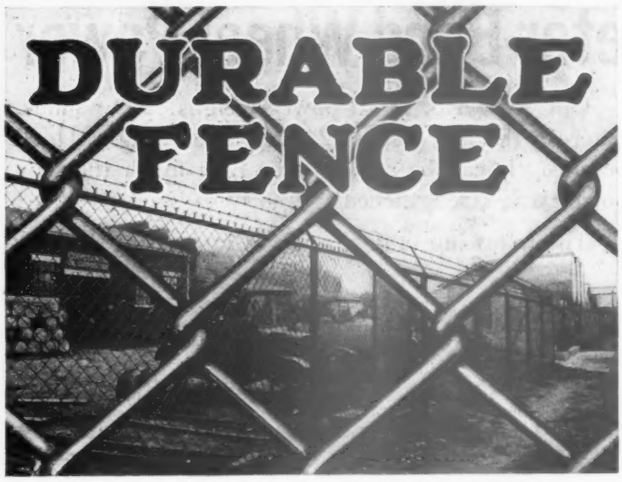

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PAGE
PROTECTION FENCE

Mont. and laying a 6-inch line in its place. The increase in production of the Sunburst Field was too much for the old line to handle and the Illinois decided early last spring to lay a larger line; the distance is about 5 miles and the new line follows the old one from the field to the tank farm and loading racks on the railroad just south of the town of Sunburst. The crude goes by rail or pipe line to Canadian refineries mainly.

CANADIAN FIELDS

(Continued from Page 46)

is the usual vague talk of local activities by the Anglo-Persian Oil Co. and the Dutch-Shell, and of an impending battel royal between the British interests and "Standard Oil" for Alberta's oil resources. But so far, the Anglo-Persian and the Dutch-Shell are unrepresented here except by talk; while Imperial Oil, Ltd., (the Canadian Standard) has definitely announced that it will do no work whatever in the Irma-Wainwright Field this season. Wainwright people, however predict that "next year" will see the horizon black with derricks; and plans are actually being drawn for a $160,000 hotel for the town.

The country outside of Wainwright is a vista of rolling plains, wheat fields, poplar buttes and meadows. Eight miles from Wainwright to the west is the blackened site of Imperial Oil, Ltd. Fabyan No. 1, Section 18-45-7w-4, marked by a discarded steam boiler and a casing head. This well, after failing to find oil, was finished as a gasser. A little distance away, about 1 mile, Maple Leaf Oil Co. No. 1, Section 24-45-8w-4, is located on the second "bench" above the Battle River. The site is surrounded by an oat field, while a few yards back runs the C. N. R. D. O. Credille, who drilled the two British Petroleum tests last year, and brought in the British Petroleum's No. 2 as the first real oil producer in the Irma-Wainwright Field, is in charge of the drilling for the contractors, the Edmonton Gas & Development Co. F. C. Beresford, a prominent Canadian expert, is superintendent for the Maple Leaf Oil Co. The outfit is A-1, with heavy rotary drilling outfit and well equipped camp. A gas line from Fabyan No. 1 1 mile distant, supplies fuel for drilling, and water is piped from springs on the hillside; while the company also has electric light.

The Maple Leaf No. 1 is perhaps the most important test now drilling in the field, since it is located on a practically direct line between the two Imperial tests, one of which struck gas and the other encountered salt water. In the drilling so far, small pockets of gas have been encountered under practically every "shell;" and at 300 feet the same formation was met as the British Petroleum's No. 2 (the oil well) encountered at 500 feet. The test is now down 1,100 feet and drilling, having made 510 feet in 10 days. A tentative location is now being made for No. 2 test.

Tests Drilling

British Petroleums, Ltd. has two tests drilling in the opposite direction from Maple Leaf Oil Co. No. 1, and a few miles distant. Of two tests drilled last year, British Petroleum's No. 1, Section 36-45-7w-4 got a big gas flow, and No. 2, Section 30-46-6w-4 struck heavy oil. No. 2, which looked for production in the Dakota sand, got its oil in the bottom of the Benton shale, without reaching the Dakota. No. 2 has never been subjected to a commercial test by continuous pumping, but both wells are now shut in, pending the results of development work now in progress. The company has, however, secured a Government permit for the manufacture of carbon black from its gas production; and work will probably be commenced on this project after the season's drilling is finished. Newton W. Emmens is field manager and V. C. Lamb, formerly of the West Virginia fields, is assistant superintendent.

British Petroleum No. 4 is located close to Nos. 1 and 2, all three wells being grouped only a few hundred yards apart, one just over the edge of the Battle River coulee and two on higher ground. The drilling crews are Texas men, familiar with rotary outfits. Everything is housed in; both here and at No. 3, and the outfits run 24 hours a day. A substantial wire fence shuts out intruders, and no one is allowed to enter without a written permit. The drilling camp and the outfits generally are very elaborate and complete. No. 4 well is just nicely under way. British Petroleum No. 3, Section 29-45-6w-4, is about 1 mile distant from the three other wells, on a higher ridge; and is the farthest advanced of all the tests now drilling in the Irma-Wainwright Field. The heavy rotary outfit is down 1,520 feet with some gas showing, but not in commercial quantities; and commercial gas can hardly be expected short of 1,700 feet. Barring accidents, this test should finish early in August.

Outside Wainwright

Four miles out of Wainwright, on the return trip, the Western Consolidated Oil Co., Section 20-45-6w-4, is reached. This company has just finished rigging up with a standard outfit which was moved north in the spring from Aldersyde, near Calgary, where it had been used on the Drumheller Oil & Gas Co. drilling. The entire outfit is housed in and will start work as soon as casing arrives. The test is financed largely by Calgary men, and J. O. Williams of Calgary is geologist for the company and in general charge of the work.

On the eastern edge of Wainwright, the Wainwright Oil Producers Syndicate has a standard outfit at work on Section 36-44-7w-4. This test is being drilled on leases originally secured by the Wainwright Oil & Development Co. C. A. Walton is field manager and R. Bradley is head driller. At the time the well was visited, the drive pipe was just being landed. Being close in, the company plans, if it get gas instead of oil, to sell and distribute its production in Wainwright.

The foregoing represents the actual drilling now under way in the immediate Irma-Wainwright Field. The Globe Drilling Co. of Edmonton, which has a test now drilling on at about 1,250 feet, on Section 14-47-27w-4 in the Pigeon Lake district, west of Wetaskiwin, has made a tentative location in the Irma-Wainwright Field about midway between Imperial Oil, Ltd. Fabyan No. 1 and British Petroleum's No. 2, and is planning to start drilling early in August. South of Monitor, in eastern Alberta, the West

(Continued on Page 115)

NORTH CENTRAL TEXAS

(Continued from Page 46)

Independent Oil Co.'s No. 1 Roberton, cleaning out at 1,010 feet; Magnolia Petroleum Co.'s No. 1 Mills, sand at 1,430 feet showing a little oil, passed up and will drill deeper.

Clay County—Drilling: Gumley and others' No. 1 Stine, flowed 128 bbls. in 24 hours at 1,780 feet; D'Yarmett and others' No. 1 Bullington, has a small well from sand at 1,195 feet; Nebraska Oil Co.'s No. 1 Meyer, shut down for orders in sandy lime at 3,405 feet; Scaling Oil Corp. No. 1 Scaling, drilling in shale at 2,125 feet; Texland Production Co.'s No. 1-B Johnson, drilling at 405 feet.

Montague County—Drilling: The Texas Co.'s No. 2-A Gist, cleaning out and underreaming 15½-inch casing at 410 feet; Boyd Oil Co.'s No. 1 Salmon, showing 3 bbls. of oil per hour from sand at 900 feet, will move rig to No. 2 Maddox, same company.

Throckmorton County—Completions: Maer and others' No. 1 Portwood, dry at 1,805 feet.

Drilling: Cragin and others' No. 1 Burkhalter, a rig; Hale Tex Oil Co.'s No. 1 Elliott, underreaming 8¼-inch casing at 720 feet; Houghland and others' No. 1 McKnight, drilling at 340 feet; Humble Oil & Refining Co.'s No. 1 Mrs. Stubblefield, drilling in shale at 610 feet; Larkin and others' No. 1 Conger, show of gas and underreaming at 1,025 feet; Whatley and others' No. 1 Todd, showing 1,000,000 feet of gas and shut down at 820 feet.

Carson County—Drilling: The Texas Co.'s No. 4 Burnett, drilling in blue shale

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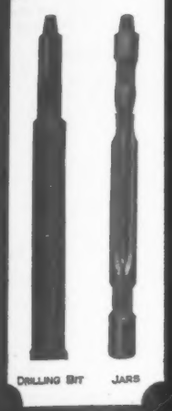

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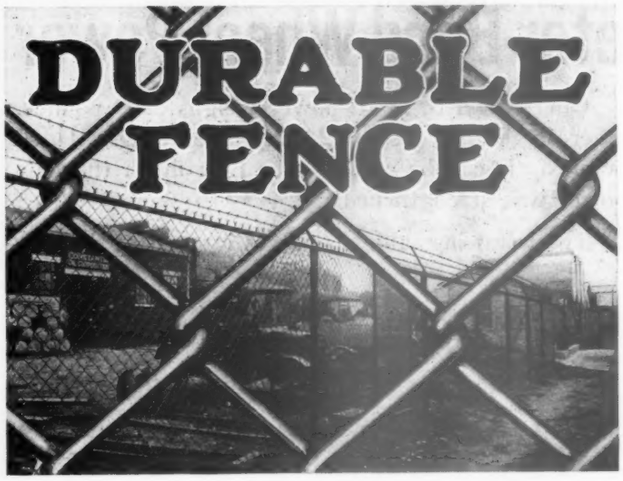

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PAGE
PROTECTION FENCE

Mont. and laying a 6-inch line in its place. The increase in production of the Sunburst Field was too much for the old line to handle and the Illinois decided early last spring to lay a larger line; the distance is about 5 miles and the new line follows the old one from the field to the tank farm and loading racks on the railroad just south of the town of Sunburst. The crude goes by rail or pipe line to Canadian refineries mainly.

CANADIAN FIELDS

(Continued from Page 46)

is the usual vague talk of local activities by the Anglo-Persian Oil Co. and the Dutch-Shell, and of an impending battel royal between the British interests and "Standard Oil" for Alberta's oil resources. But so far, the Anglo-Persian and the Dutch-Shell are unrepresented here except by talk; while Imperial Oil, Ltd., (the Canadian Standard) has definitely announced that it will do no work whatever in the Irma-Wainwright Field this season. Wainwright people, however predict that "next year" will see the horizon black with derricks; and plans are actually being drawn for a $160,000 hotel for the town.

The country outside of Wainwright is a vista of rolling plains, wheat fields, poplar buttes and meadows. Eight miles from Wainwright to the west is the blackened site of Imperial Oil, Ltd. Fabyan No. 1, Section 18-45-7w-4, marked by a discarded steam boiler and a casing head. This well, after failing to find oil, was finished as a gasser. A little distance away, about 1 mile, Maple Leaf Oil Co. No. 1, Section 24-45-8w-4, is located on the second "bench" above the Battle River. The site is surrounded by an oat field, while a few yards back runs the C. N. R. D. O. Credille, who drilled the two British Petroleum tests last year, and brought in the British Petroleum's No. 2 as the first real oil producer in the Irma-Wainwright Field, is in charge of the drilling for the contractors, the Edmonton Gas & Development Co. F. C. Beresford, a prominent Canadian expert, is superintendent for the Maple Leaf Oil Co. The outfit is A-1, with heavy rotary drilling outfit and well equipped camp. A gas line from Fabyan No. 1 1 mile distant, supplies fuel for drilling, and water is piped from springs on the hillside; while the company also has electric light.

The Maple Leaf No. 1 is perhaps the most important test now drilling in the field, since it is located on a practically direct line between the two Imperial tests, one of which struck gas and the other encountered salt water. In the drilling so far, small pockets of gas have been encountered under practically every "shell;" and at 300 feet the same formation was met as the British Petroleum's No. 2 (the oil well) encountered at 500 feet. The test is now down 1,100 feet and drilling, having made 510 feet in 10 days. A tentative location is now being made for No. 2 test.

Tests Drilling

British Petroleums, Ltd. has two tests drilling in the opposite direction from Maple Leaf Oil Co. No. 1, and a few miles distant. Of two tests drilled last year, British Petroleum's No. 1. Section 36-45-7w-4 got a big gas flow, and No. 2, Section 30-46-6w-4 struck heavy oil. No. 2, which looked for production in the Dakota sand, got its oil in the bottom of the Benton shale, without reaching the Dakota. No. 2 has never been subjected to a commercial test by continuous pumping, but both wells are now shut in, pending the results of development work now in progress. The company has, however, secured a Government permit for the manufacture of carbon black from its gas production; and work will probably be commenced on this project after the season's drilling is finished. Newton W. Emmens is field manager and V. C. Lamb, formerly of the West Virginia fields, is assistant superintendent.

British Petroleum No. 4 is located close to Nos. 1 and 2, all three wells being grouped only a few hundred yards apart, one just over the edge of the Battle River coulee and two on higher ground. The drilling crews are Texas men, familiar with rotary outfits. Everything is housed in; both here and at No. 3, and the outfits run 24 hours a day. A substantial wire fence shuts out intruders, and no one is allowed to enter without a written permit. The drilling camp and the outfits generally are very elaborate and complete. No. 4 well is just nicely under way. British Petroleum No. 4, Section 29-45-6w-4, is about 1 mile distant from the three other wells, on a higher ridge; and is the farthest advanced of all the tests now drilling in the Irma-Wainwright Field. The heavy rotary outfit is down 1,520 feet with some gas showing, but not in commercial quantities; and commercial gas can hardly be expected short of 1,700 feet. Barring accidents, this test should finish early in August.

Outside Wainwright

Four miles out of Wainwright, on the return trip, the Western Consolidated Oil Co., Section 20-45-6w-4, is reached. This company has just finished rigging up with a standard outfit which was moved north in the spring from Alderside, near Calgary, where it had been used on the Drumheller Oil & Gas Co. drilling. The entire outfit is housed in and will start work as soon as casing arrives. The test is financed largely by Calgary men, and J. O. Williams of Calgary is geologist for the company and in general charge of the work.

On the eastern edge of Wainwright, the Wainwright Oil Producers Syndicate has a standard outfit at work on Section 36-44-7w-4. This test is being drilled on leases originally secured by the Wainwright Oil & Development Co. C. A. Walton is field manager and R. Bradley is head driller. At the time the well was visited, the drive pipe was just being landed. Being close in, the company plans, if it get gas instead of oil, to sell and distribute its production in Wainwright.

The foregoing represents the actual drilling now under way in the immediate Irma-Wainwright Field. The Globe Drilling Co. of Edmonton, which has a test now drilling on at about 1,250 feet, on Section 14-47-27w-4 in the Pigeon Lake district, west of Wetaskiwin, has made a tentative location in the Irma-Wainwright Field about midway between Imperial Oil, Ltd. Fabyan No. 1 and British Petroleum's No. 2, and is planning to start drilling early in August. South of Monitor, in eastern Alberta, the West

(Continued on Page 115)

NORTH CENTRAL TEXAS

(Continued from Page 46)

Independent Oil Co.'s No. 1 Robertson, cleaning out at 1,010 feet; Magnolia Petroleum Co.'s No. 1 Mills, sand at 1,430 feet showing a little oil, passed up and will drill deeper.

Clay County—Drilling: Gumley and others' No. 1 Stine, flowed 128 bbls. in 24 hours at 1,780 feet; D'Yarmett and others' No. 1 Bullington, has a small well from sand at 1,195 feet; Nebraska Oil Co.'s No. 1 Meyer, shut down for orders in sandy lime at 3,405 feet; Scaling Oil Corp. No. 1 Scaling, drilling in shale at 2,125 feet; Texland Production Co.'s No. 1-B Johnson, drilling at 405 feet.

Montague County—Drilling: The Texas Co.'s No. 2-A Gist, cleaning out and underreaming 15½-inch casing at 410 feet; Boyd Oil Co.'s No. 1 Salmon, showing 3 bbls. of oil per hour from sand at 900 feet, will move rig to No. 2 Maddox, same company.

Throckmorton County—Completions: Maer and others' No. 1 Portwood, dry at 1,805 feet.

Drilling: Cragin and others' No. 1 Burkhalter, a rig; Hale Tex Oil Co.'s No. 1 Elliott, underreaming 8¼-inch casing at 720 feet; Houghland and others' No. 1 McKnight, drilling at 340 feet; Humble Oil & Refining Co.'s No. 1 Mrs. Stubblefield, drilling in shale at 610 feet; Larkin and others' No. 1 Conger, show of gas and underreaming at 1,025 feet; Whatley and others' No. 1 Todd, showing 1,000,000 feet of gas and shut down at 820 feet.

Carson County—Drilling: The Texas Co.'s No. 4 Burnett, drilling in blue shale

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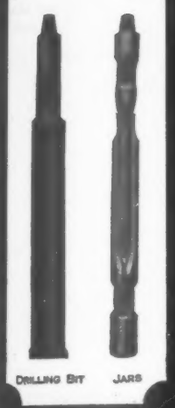

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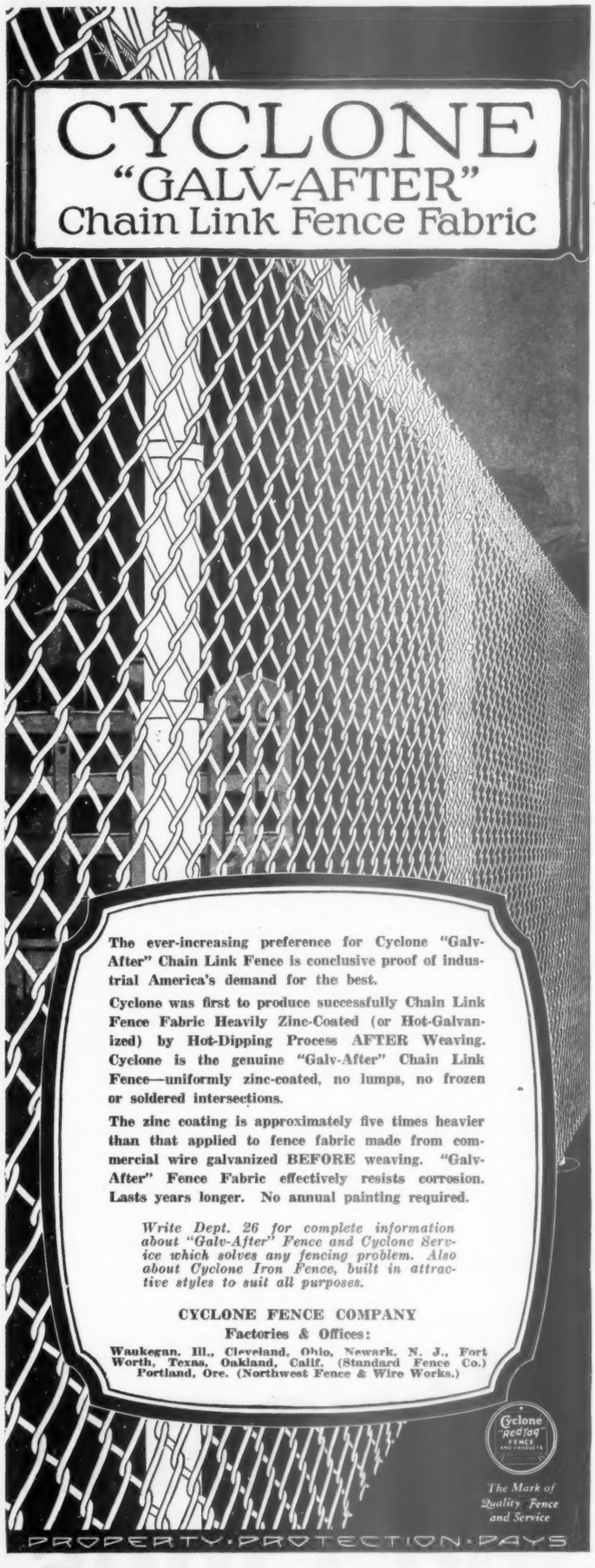
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at 1,680 feet; No. 1 Mary Burnett, drilling in blue shale at 2,710 feet; No. 2 Mary Burnett, shut down casing trouble at 2,725 feet; American Refining Co.'s No. 1 Burnett, drilling in red shale at 2,890 feet; No. 2 Burnett, fishing for roller bit at 2,420 feet; Culbertson Brothers' No. 1 Armstrong, drilling in lime and shells at 2,350 feet; Dancinger Oil Co.'s No. 1 Burnett, drilling in salt at 1,400 feet; Gulf Production Co.'s No. 1-A Burnett, drilling in gyp and red beds at 625 feet; No. 4-A Burnett, drilling at 1,300 feet; Greenwood and others' No. 1 Burnett, shut down wajting for cement to set at 1,300 feet; Silk and others' No. 3 Burnett, fishing job at 2,905 feet; Skelly Oil Co.'s No. 1 Burnett, drilling at 800 feet.

Childress County—Completions: Anderson and others' No. 1 Givens, dry at 3,190 feet.

Potter County—Drilling: Woodley and others' No. 1 Dulaney, showing gas from sandy lime at 1,760 feet.

Garza County—Drilling: Blackwell and others' No. 1 Boren, drilling in salt and shale at 1,350 feet; Union Petroleum Co.'s No. 1 Connell, spudding.

Gray County—Drilling: Holmes and others' No. 1 Morris shut down for orders in salt water sand at 3,102 feet; Wilcox Oil Co.'s No. 1 Combs, shut down for storage, estimated production 300 bbls. per day at 2,925 feet; No. 1 Wilson, drilling at 1,300 feet; Texas Co.'s No. 1 Saunders, reaming at 2,780 feet.

Hutchinson County—Completions: Coline Oil Co.'s No. 1 Standford, 50 bbls. of oil and 30,000,000 feet of gas at 3,075 feet.

Drilling: Gulf Petroleum Co.'s No. 1 Cockrell, drilling at 485 feet; No. 1 Whittenburg, drilling in red beds at 1,510 feet; Prairie Oil & Gas Co.'s No. 1 Veahl, drilling at 900 feet; Wilson and others' No. 1 Whittenburg, showing 40,000,000 feet of gas and cementing 10-inch casing at 2,740 feet.

Potter County—Completions: Producers & Refiners Oil Co.'s No. 1-A Bivens, 15,000,000 feet of gas at 3,275 feet.

Palo Pinto County—Completions: Scott and others' No. 1 Riverbed, dry at 3,713 feet.

Drilling: Strawn Coal Co.'s No. 1 Strawn, drilling at 1,530 feet.

Callahan County—Completions: McCree and others' No. 1 Isenhower, dry at 1,770 feet; Sherrin and others' No. 3 Cathey, 35 bbls. at 1,780 feet.

Drilling: Bryant and others' No. 1 Ford, drilling at 980 feet; Dutton and others' No. 1 Carter, underreaming at 840 feet; No. 6 Cathey, spudding; No. 1 Harwell, drilling at 700 feet; Sherrin and others' No. 4 Cathey, drilling in brown shale at 1,050 feet; Texas Pacific Coal & Oil Co.'s No. 1 Biggerstaff, drilling at 975 feet; Tidal Oil Co.'s No. 1 Cathey, drilling at 1,080 feet.

Coleman County—Completions: Gray and others' No. 1 Gray, 15 bbls. at 2,485 feet.

Reagan County—Completions. Big Lake Oil Co.'s No. 8 University, 30 bbls. at 3,070 feet; same company's No. 10 University, 1,450 bbls. at 2,958 feet.

Drilling. Big Lake Oil Co.'s No. 11 University, showing some oil and underreaming 8¼-inch casing at 2,518 feet; Dunning and others' No. 1 Sawyer, showing oil and drilling at 2,570 feet; Texon Oil & Land Co.'s No. 1 University, fishing for one string of tools at 2,600 feet; No. 2 University, fishing job at 1,600 feet.

Shackelford County—Drilling: Illsing and others' No. 1 Poindexter, drilling in shale at 1,725 feet; Humble Oil & Refining Co.'s No. 1 Miles, showing 1,500,000 feet of gas a little oil, and drilling at 3,205 feet; Kellogg and others' No. 1 Sedwick, drilling at 2,425 feet; Magnolia Petroleum Co.'s No. 3 George, fishing for tools at 3,490 feet.

Mitchell County—Drilling: Eddleman and others' No. 1 Gist, landed 12½-inch casing at 805 feet; California Co.'s No. 1 Morrison, drilling in rock without any oil showing at 5,290 feet; No. 3 Miller, drilling at 2,820 feet; No. 8 Morrison, drilling at 2,750 feet; No. 9 Morrison, drilling at 2,400 feet; No. 10 Morrison, drilling at 1,135 feet; No. 6 Abrams, drilling at 500 feet.

Loving County—Drilling: Ramsey Oil Co.'s No. 1 Russell, fishing for casing at 4,486 feet; Wheat and others' No. 1 Chapman, drilling at 50 feet.

Brown County—Drilling: Avery and others' No. 3 Cox, drilling at 300 feet; California Production Syndicate's No. 1 Prather, drilling at 720 feet; Carlton and others' No. 1 Fomby, topped lime and drilling at 2,390 feet; Gillman and others' No. 4 Newton, drilling at 900 feet; Gump and others' No. 1 Moore, drilling at 420 feet; Omaha Southern Oil Co.'s No. 2 Gaines, cleaning out at 1,085 feet.

Comanche County—Drilling: Ghormely and others' No. 1 Moorman, drilling at 1,980 feet; Kirk & Brewer's No. 1 Stone, cleaning out after shot at 2,740 feet; Poe & Wilson's No. 1 Johnson, drilling at 1,470 feet; Spratt and others' No. 1 Martin, drilling in lime rock at 2,900 feet.

PRODUCTION REPORT

Week Ending July 17, 1926

Burkburnett	
Barkley & Meadows	1,330
Humble Oil & Ref. Co.	520
Gulf Production Co.	960
Magnolia Petroleum Co.	3,385
McMahon Oil Co.	425
Panhandle Oil & Ref. Co.	405
Prairie Oil & Gas Co.	30
Sinclair Oil & Gas Co.	65
The Texas Co.	630
Texhoma Oil & Ref. Co.	475
Miscellaneous	11,060
Total	19,111
Electra	
Empire Gas & Fuel Co.	1,390
Humble Oil & Ref. Co.	275
Griswold Oil Co.	245
Gulf Production Co.	1,080
Magnolia Petroleum Co.	4,300
McMahon Oil Co.	210
Panhandle Oil & Ref. Co.	130
The Texas Co.	4,300
Texhoma Oil & Ref. Co.	1,820
Miscellaneous	7,365
Total	21,115
Iowa Park, Etc.	
Griswold Oil Co.	25
Gulf Production Co.	40
Panhandle Oil & Ref. Co.	300
Texhoma Oil & Ref. Co.	85
Miscellaneous	4,320
Archer County—	
Empire Gas & Fuel Co.	1,535
Griswold Oil Co.	1,065
Gulf Production Co.	340
Humble Oil & Ref. Co.	205
Magnolia Petroleum Co.	140
Panhandle Oil & Ref. Co.	135
Prairie Oil & Gas Co.	1,600
The Texas Co.	715
Texhoma Oil & Ref. Co.	2,875
Miscellaneous	21,750
Petrolia—	
Gulf Production Co.	60
Magnolia Petroleum Co.	90
The Texas Co.	75
Miscellaneous	150
Total	35,495
Stephens County—	
Empire Gas & Fuel Co.	195
Gulf Production Co.	1,490
Humble Oil & Ref. Co.	1,240
Magnolia Petroleum Co.	815
Mid-Kansas Oil & Gas Co.	2,025
Prairie Oil & Gas Co.	335
Sinclair Oil & Gas Co.	170
The Sun Co.	550
The Texas Co.	2,330
Texas Pacific Coal & Oil Co.	1,335
Miscellaneous	9,300
Total	20,195
Eastland County—	
Gulf Production Co.	460
Humble Oil & Ref. Co.	120
Magnolia Petroleum Co.	530
Panhandle Oil & Ref. Co.	540
Prairie Oil & Gas Co.	700
Sinclair Oil & Gas Co.	530
The Texas Co.	420
Texas Pacific Coal & Oil Co.	900
Miscellaneous	2,900
Total	7,160
Other Fields	
Strawn—	
Texas Pacific Coal & Oil Co.	280
Miscellaneous	500
Moran—	
Empire Gas & Fuel Co.	60
Humble Oil & Ref. Co.	445
The Texas Co.	160
Texhoma Oil & Ref. Co.	170
Miscellaneous	2,715
Coleman County—	
Miscellaneous	130
Brown County—	
Miscellaneous	500
Comanche-Eastland—	
Humble Oil & Ref. Co.	230
Magnolia Petroleum Co.	1,100
Prairie Oil & Gas Co.	200
Sinclair Oil & Gas Co.	60
The Texas Co.	225
Texas Pacific Coal & Oil Co.	170
Miscellaneous	4,900
Young County—	
Gulf Production Co.	105
Sinclair Oil & Gas Co.	490
Panhandle Oil & Ref. Co.	290
The Texas Co.	80
Miscellaneous	3,300
Mitchell County	1,450
Reagan County	1,015
Jack County	30
Scurry County	10
Carson County	395
Hutchinson County	85
Total	38,946
Total this week	133,135
Total last week	127,948
Loss	6,813

Note Results of These High Pressure Tests

TEST NO. 1

300-lb. Valve Blew Up at 1,950 lbs.

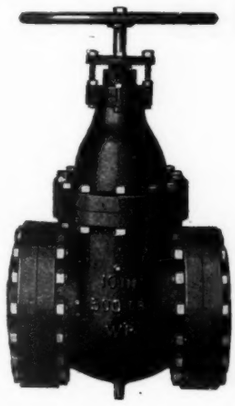
Working pressure cast on body of valve: 300 lbs.

Leaked at 1,900 lbs.

Blew up at 1,950 lbs.

TEST NO. 2

500-lb. Valve Leaked at 2,625 lbs.



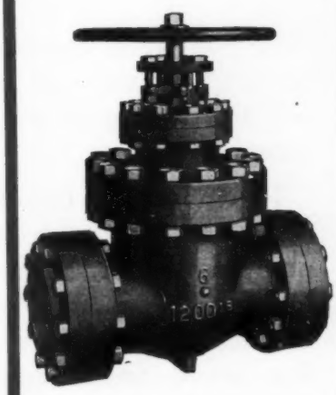
Working pressure cast on body of valve: 500 lbs.

Leaked at 2,625 lbs.

Unable to blow up this valve at 3,000 lbs.

TEST NO. 3

1,200-lb. Valve Leaked at 4,000 lbs.



Working pressure cast on body of valve: 1,200 lbs.

Leaked at 4,000 lbs.

No breakage at 4,300 lbs.

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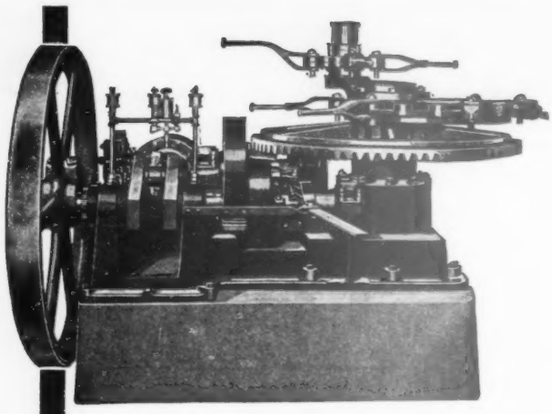

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PATTIN POWER

OKLAHOMA FIELDS

(Continued from Page 39)

the Kingwood Oil Co. was spudding No. 5 Davis, C NE SW SW, Section 3-9-9. The Berry Petroleum Co.'s No. 2, C SE NW SE, Section 4-9-9, was spraying 150 bbls. daily with 25,000,000 feet of gas from sand at 3,312-27 feet. Champlin Refining Co. and Winkler abandoned No. 1 Simon, C SE NE SW, same section, as a failure at 3,361 feet. The Foster Investment Co. was cleaning out No. 2 Tiger, C NW SW NE, same section after setting the 15-inch casing at 667 feet. Gibson & Zahniser were repairing bull wheels on No. 2 Carter, C NE SE NW, same section, with total depth at 108 feet. The same interests also had a rig on the ground for No. 3 Carter, C NW SE NW, same section. The Transcontinental Oil Co. was cleaning out No. 5 Tiger, C SE SW NE, Section 4-9-9, at 660 feet, the 15-inch casing point.

In Okfuskee County, W. B. Pine was drilling at 2,480 feet in his old well, No. 3 Meyers, SE cor. NE NW, Section 3-11-11, and the Tidal Oil Co. was spudding No. 2 Hawkins, NW cor. NE, same section. The Anglo-Texas Co. had a rig in place for No. 1 Cully, NW cor. NE NW, Section 4-11-11. The Phillips Petroleum Co.'s No. 14 Fields, CEL NE NW, Section 24-11-11, was good for 10,000,000 feet of gas from sand at 2,742-44 feet. The Okliana Oil Co. was spudding No. 4 Barnett, CEL SE NE, Section 34-11-11.

Across the line, in Okmulgee County, the Henryetta Oil & Gas Co. abandoned No. 5 Hawkins, SW cor. NW, Section 4-11-12, at 1,680 feet. Moffett & French had a rig built for No. 2-A Hawkins, NE cor. Section 7-11-12.

Tulsa County

In Tulsa County, two wells were added to the Vern Pool just west of the Oil Capital. The Shaffer Oil & Refining Co.'s No. 6-A Partridge, CEL SE SW NW, Section 4-19-12, topped the first sand at 1,948-59 feet and found the lower pay at 2,056-62 feet, then ran into water at 2,065-69 feet. It was plugged back four feet and made 30 bbls. natural. The other well was added to the Vern Pool by A. R. Simmons and others, in No. 2-A Partridge, SW cor. NE NW, Section 4-19-12, which made 150 bbls. natural from sand at 1,970-85 feet, with total depth at 2,077 feet.

Several new ones were also added to the Lawnwood town lot area, just south of the Bruner Pool, and some were disappointments. Thompson & Black contributed one of these in No. 2 Berryhill, CEL NE NE, Section 7-19-12, just across the road from the town lot drilling, which made 100 bbls. natural from sand at 1,960-76 feet. Caldwell & Sons had a well good for 150 bbls. natural in their No. 2 Townsite, CWL NW NW NW, Section 8-19-12, from sand at 1,952-60 feet. Their No. 3, CSL NW NW NW, same section, was drilling at 1,000 feet. Hughes & Worley shot No. 1 Townsite, C SW NW NW, same section, and it made 20 bbls. from sand at 1,975-79 feet, wtih total depth at 1,997 feet.

Henry & Avery found oil sand at 1,964-72 feet in No. 1 Townsite, CSL NW NW NW, Section 8-19-12, and encountered water at 1,996-97 feet. After plugging back 5 feet, it was good for 40 bbls. natural. Caldwell & Sons were drilling at 1,200 feet in No. 1, in the NW NW NW, same section, and were spudding No. 3, in the same general location. The Choctaw Oil Co. had an 80-bbl. well in No. 1, C SW NW NW, same section, from sand at 1,961-87 feet. G. M. Lionberger and others shut down No. 1, CSL SW NW NW, same section, at 1,500 feet, and McDonald and others were drilling No. 1, C SW NW NW, same section, at 1,600 feet.

Morgan & Hancock skidded the rig for No. 2 Townsite, C NW NW NW, same section, and were down 800 feet. The Steinboor Oil Co. was drilling No. 1, CSL NW NW NW, at 1,650 feet; Shreve and others were drilling No. 1, same location, at 1,600 feet. Bill Weston and others were down below 200 feet in No. 1, CEL NW NW NW, all in Section 8-19-12.

G. N. Wright and others' No. 1, CEL NW NW NW, same section, was good for 120 bbls. natural from sand at 1,978-83 feet.

The Crescent Drilling Co. was swabbing 20 bbls. from No. 1 Colbert, C SW NE, Section 16-19-12, after a 120-quart shot in sand at 2,217-77 feet. It was plugged back from 2,442 feet.

In the Bruner Pool, the Sand Springs Home's No. 4 Bruner, SE cor. SW, Section 6-19-12, an old well, was making 330 bbls. natural from sand at 2,046-54 feet.

North of Tulsa, J. R. Hadley was moving in a rig for No. 1-A Collins, CNL NE NE, Section 2-21-13. H. Hayden abandoned No. 2 Murray, SW cor. NE, Section 9-21-13, dry at 1,935 feet. U. S. Oil & Gas Co. and others shot No. 15 Baker, CSL SE SW, Section 9-21-13, with 40 quarts and it made 10 bbls. from sand at 1,310-22 feet. L. L. West plugged No. 1 Sunday, NW cor. SE SE, Section 12-21-13 as a failure at 1,850 feet. The Tidal Oil Co.'s No. 10 W. Twist, SW cor. NE SE, Section 14-20-12, an old well, was also plugged and abandoned at 2,193 feet. Wolfe Brothers and others were drilling at 1,350 feet in No. 1-W S. Wilson, CNL NE SE SW, Section 6-20-13, and the Echo Oil Co. was drilling No. 1-A Chandler, SW cor. SE NW, Section 7-20-13, at 1,400 feet.

Okmulgee County

In northern Okmulgee County, the Peer Oil Corp. had a rig up for No. 1-A Squire, NW cor. NE, Section 35-16-12.

In the southern part of the county, Keeton & Gould brought in No. 1, NW cor. SW, Section 33-13-12, good for 10,000,000 feet of gas in sand at 1,852-72 feet. Charles Brock was drilling at 820 feet in No. 9 Thomas, CEL NE SW, Section 32-13-11. The Berry Petroleum Co. had a rig on the ground for No. 1 Harrison, NW cor. Section 21-13-11.

E. Colvin and others were drilling at 900 feet in No. 2 Tiger, NW cor. SW SE, Section 4-12-12. The Southern States Oil Corp's No. 1 Grayson, CSL SE SW, Section 6-12-12, was spraying 10 bbls. per hour, with 8,000,000 feet of gas from sand at 2,549-52 feet. W. C. Newman's No. 2 Grayson, NW cor. SW, Section 17-12-13, was abandoned as dry at 2,972 feet.

In Okfuskee County, the Independent Oil & Gas Co.s No. 1 Carolina, CNL NE SW SW, Section 33-12-11, made 287 bbls. from sand at 2,695-2,740 feet with the oil pay at 2,718-33 feet, and a show of water below that. Total depth was 2,747 feet.

C. W. West was spudding No. 1, SE cor. Section 5-13-9.

In Grady County, Fred Luginbyle abandoned No. 1 Gray, C SE SW, Section 30-5n-6w, as dry at 3,029 feet. Gant, Frates & Becker also plugged No. 1 Spencer, C NW SW, Section 8-4n-5w, as a failure at 3,008 feet. Roy Nash had 400 feet of water in No. 1 Norton, CEL NE NW NE, Section 7-3-5w, from sand at 1,876-84 feet.

Stogner and others found 12,500,000 feet of gas in No. 1 Farwell, C SE NW NE, Section 23-5n-8w.

In Caddo County, the Acme Development Co. was waiting on surface casing to set in No. 2 Fugate, NW cor. SE SW, Section 35-6n-9w.

In Woods County, the Victor Oil Co. shut down No. 1 Gray, SW cor. SE, Section 10-25-15w, at 970 feet, with intention of starting up again on August 1.

East of Walters, in Cotton County, Bilbro and others were spudding No. 1 Adams, CSL NE SE NE, Section 22-2s-10w.

In southeastern Tillman County, the Okla-Texas Refining Co. abandoned No. 5 Riverbed, NE cor. NW SE, Section 4-5s-14w, as dry at 2,578 feet. Schwartz and others were cleaning out No. 1 Goehler, C SE NW, same section, at 1,340 feet, with total depth at 1,370 feet.

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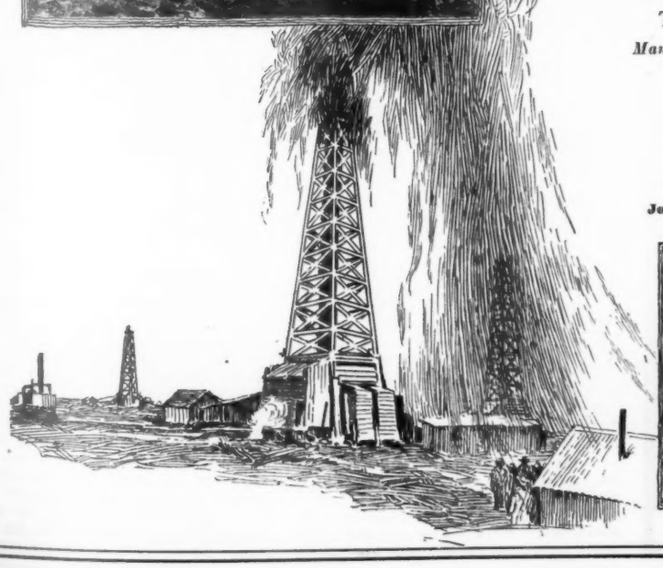

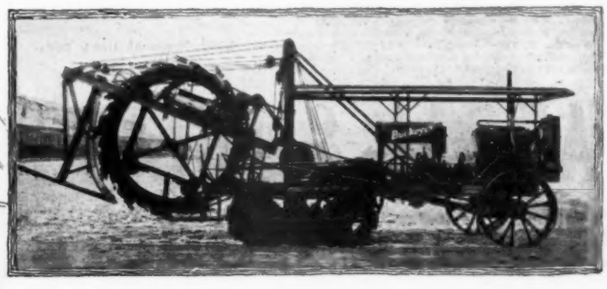

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FARRAR & TREFTS Steam Boilers

115

EASTERN FIELDS

(Continued from Page 56)

fayette district, Pleasants County, Smith & McCullough placed rig timbers at a second location on the Perry Riggs farm. Zinn & Co. are hauling tools to a location on the O. P. Scott farm, in Southwest district, Doddridge County. In Central district, the Carter Oil Co. is hauling tools to a location on the F. P. Dotson farm. In the same district, the Imperial Oil & Gas Products Co. started to drill on the L. Dotson farm. In Cove district, C. A. Vanhorn & Co. reached a depth of 1,800 feet on the C. A. Vanhorn farm. In West Union district, the Clifton Oil & Gas Co. started to drill No. 4 on the S. V. Smith farm and is making a location on the James Freeman farm. In Clay district, Monongalia County, the Randall Gas Co. is due in the sand on the Noah Wright farm. In the same district, the Moore-Tex Oil Co. is drilling at 700 feet on the A. Lemley farm.

Southwest Pennsylvania

All late contributions to the completed list in southwest Pennsylvania are gassers, located in Greene County. In Gilmore Township, the Peoples Natural Gas Co. has a gasser in the Gordon sand on the Jesse Lemon farm. In Perry Township, the Charles Fox Gas Co.'s second test on the Charles Lemley farm is a gasser in the gas sand. In Wayne Township, H. D. Freeland & Co. drilled a test on the H. D. Freeland farm through the Bayard sand to a total depth of 3,336 feet. It is a gasser.

In Westmoreland County, on Chestnut Ridge, the Peoples Natural Gas Co. is delayed with a crooked hole at its deep test on the Seger Brothers' farm. They had reached a depth of 6,880 feet and have cemented back to 6,600 feet. The second test on the Booth-Flinn property is delayed with a fishing job at 6,835 feet. The cable broke and left the tools in the hole.

CENTRAL WEST

(Continued from Page 36)

and hollows, ranging from 60 cents to more than a dollar per 100 pounds.

Two wells were reported in the North Weir sand field of Lawrence-Johnson counties, by the Union Gas & Oil Co. No. 27 on the Proctor Sparks, is reported with a flush of 60 bbls. and No. 2 J. E. Holbrook No. 2 farm, at 15 bbls. flush. This company is drilling No. 15 Andrew Skaggs, No. 3 John Rose, and No. 16 Andrew Skaggs, and locations made for No. 6 William Lester, No. 34 J. J. Gambill, No. 5 D. H. Ferguson, and No. 22 Sanford Lyon.

In the Idamay Field of Lee County, the Carter Oil Co.'s No. 2 John Mays, is reported at 5 bbls., while the Swiss Oil Corp.'s No. 1 Dora Mays, shows a bulk of salt water.

The runs of the Cumberland Pipe Line Kentucky fields its lines from the eastern Kentucky fields for the week ending July 12, amounted to 84,238.79 bbls., for a daily average of 14,039.79 bbls.

W. KENTUCKY-TENNESSEE

(Continued from Page 40)

deal to the future development of the Owensboro district if it proves a producer.

Barren County News

The best well in the Barren County Field was Norris Brothers' No. 4 on the Russell farm, in the Emery-Moore Pool, classed as a 12-bbl. pumper at 552 feet, approximately 185 feet below the black shale. In the same district, the Carter Oil Co. finished No. 5 Wininger for 7 bbls. at 537 feet.

The Consolidated Gas Co. completed a gas well estimated at 500,000 feet in its initial test on the Duff farm. This lease is 3 miles northeast of Glasgow on Beaver Creek.

Ten wells were spudded in the latter half of the week in Barren County and at least 15 new locations were staked off. At the rate new work is starting in this county it will only be a few more weeks before it leads the State in active development work. This renewal of activity in Barren County was due entirely to the opening of the Emery-Moore Pool a few miles west of Glasgow.

Cumberland-Monroe Counties

Monroe County came to the fore with a 25-bbl. well on the Railey farm, in the old Railey Pool, 5 miles west of Tompkinsville. It was finished at 725 feet, second Sunnybrook formation. This well was originally completed several years ago but was abandoned on account of lack of marketing facilities and was drilled to its present depth by Turner & English.

In the Sulphur Creek district of Cumberland County, the Kanwha Oil Co. abandoned its No. 2 R. E. Williams at 1,550 feet. In the Bear Creek area, W. S. Raydure and the Crescent operating Co. got a duster in No. 6 Lela Keen at 350 feet. This test will be drilled deeper in the near future.

Drilling Activities

Bear Creek—The Wabash Valley Oil & Gas Co.'s No. 1 Rush was shut down; Wilcox Bros.' No. 1 Phares was making hole at 620 feet; the Oil Fork Development Co.'s No. 1 F. F. Smith was shut down with a fishing job in the below the Pencil Cave sand.

At Kettle Creek, the Dayton Oil Syndicate's No. 4 Kin Crawford was shut down at 500 feet; Coe and others' No. 1 Mary Scott was shut down at 610 feet, where the Pencil Cave was encountered; McClintock Oil Co.'s No. 7 Bud Kerr was drilling at 657 feet, 100 feet below the Cave. The Daniel Boone Oil Co.'s No. 2 Logan was drilled 100 feet below the Pencil Cave with no results. No. 4, which was also drilled deeper, is showing for 2 bbls. naturally. Both wells will be given a shot before being classed as completions. W. S. Raydure's No. 2 Cleve Blythe was shut down at 420 feet.

CRUDE OIL SITUATION RESULTS IN NO BIDS

OKLAHOMA CITY, Okla., July 19.—No bids were received by the Commissioners of the Land Office on six tracts of land in Kay County recently offered for oil and gas lease. They are in sections 13 and 36-25 north, 2 west. The Alcorn Oil Co. of Ponca City, has asked that it be advertised for sale but it declined to bid because it could not contract at this time to drill tests at an early date. The inadvisability of the contract was based on the company's believing that drilling should be suspended during the period of overproduction.

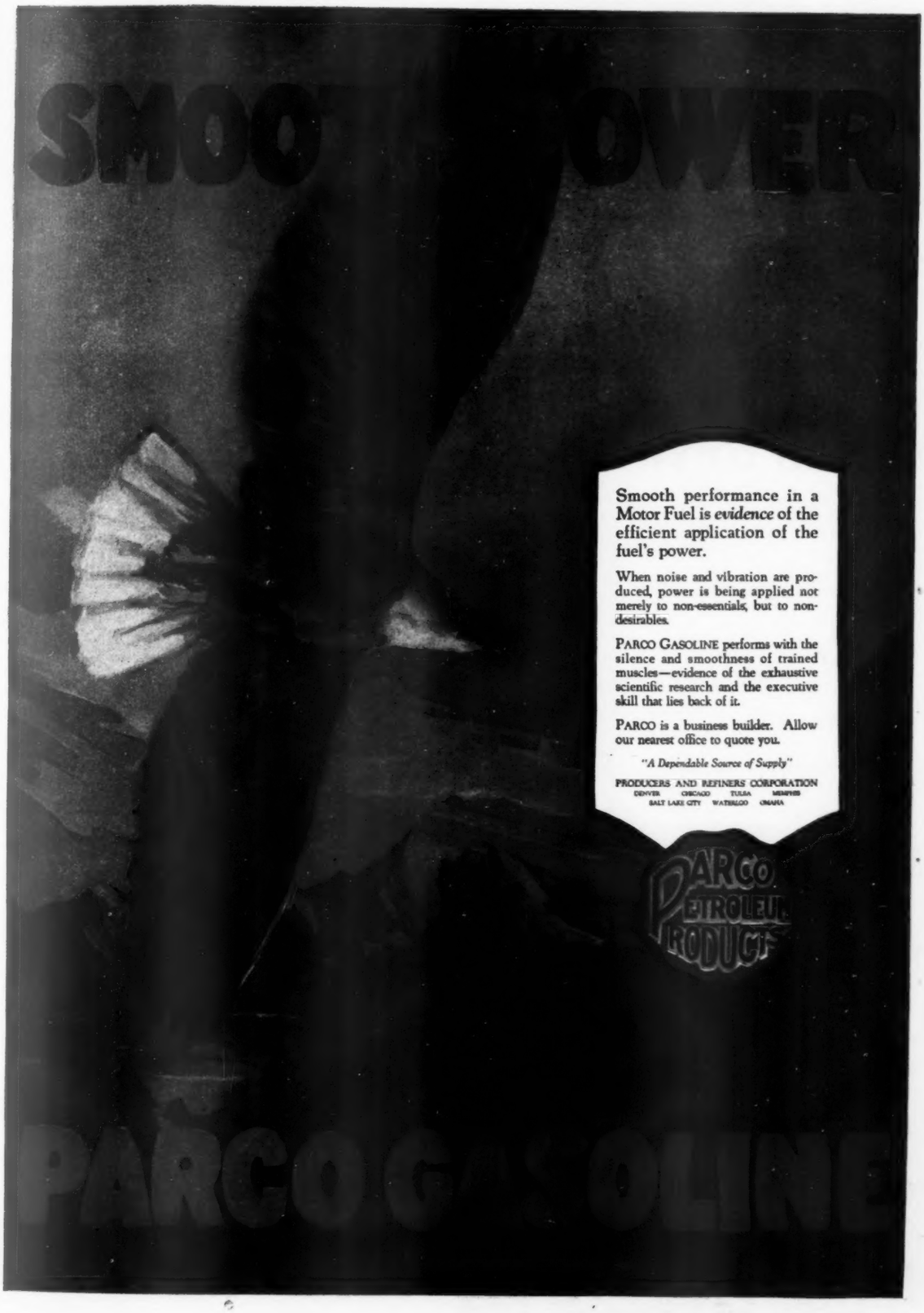
During this period, in which in some places only 50 per cent of the oil produced is run through pipe lines, the commissioners are advising producers operating State lands to run the State's oil to storage rather than sell it at low prevailing prices.

ITALIAN GRANTS IN RUSSIA

Italian interests are reported to have obtained a number of valuable concessions from Russia. One of the most important is a concession involving the managanese mines at Tkvarcheli. Negotiations leading to Italian success with numerous South Russian concessions were started at the time of the Italian recognition of the Soviet Government. While these deals are understood to have been completed without Governmental aid, the new commercial relations between the two countries resulting from the recognition pacts are said to have been indirectly responsible.

RUMANIAN OIL LAW

WASHINGTON, July 21.—The Government of the United States by no means regards the action of the Government of Rumania in adopting alleged confiscatory oil legislation as closed, it was learned at the State Department. Department officials, however, declined to go into details as to what steps might be taken by this Government to safeguard American interests. It was stated that, although the new legislation has been approved by both legislative bodies, it is understood the King has not yet signed the measure and it has not yet become effective.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Attorney General Threatens to Punish Gasoline Companies

JEFFERSON CITY, Mo., July 19.—Attorney General Barrett has issued a second warning to producers and refiners of gasoline in the State that gasoline prices must be lowered at once or prosecution would follow.

Mr. Barrett said he had received numerous communications from various sections of the State indorsing his threatened action against the oil companies and citing instances of discrimnatory prices.

"Current gasoline prices not only discriminate against Missouri, but show amazing discriminations within the State against particular localities," the attorney general said in a statement. "At the opening of the week gasoline was selling in Albany, N. Y., at 12 cents, in St. Louis at 18 cents, at Jefferson City and other interior points at more than 21 cents, while in Omaha, 200 miles from a pipe line, the price for weeks has been 15 cents. In Kansas City, certain retail dealers who started price cutting were informed by producers that their supplies would be stopped if the price cutting continued.

"Meanwhile L. V. Nicholas, president of the National Petroleum Marketers' Association, has issued a statement declaring, 'We are drowning in an oversupply of gasoline. Crude oil stocks are dangerously large. Crude oil prices should be cut to the bone immediately and gasoline prices to the public should be reduced at once.'

"The natural laws of supply and demand are being interfered with. Prices are being maintained by arbitrary measures. The State cannot fix the price, but I can proceed to punish the companies which are preventing the natural economic laws from bringing gasoline prices down. That is what I intend to do if present prices are not immediately reduced.

"I would be glad to have letters from citizens in these communities where there has been a wide divergence in price between towns in the same vicinity, and if the Standard Oil Co. and other companies are stubborn and refuse to bring prices to a just and fair level I can promise them adequate punishment."

KANSAS FIELDS

(Continued from Page 50)

Jarvis rigged up No. 1, SE cor. Section 13-11-13w, and were waiting on water.

The M. M. Valerius Oil & Gas Co. was spudding No. 1, NE cor. NW, Section 17-12-15w. The Amerada Petroleum Corp. was drilling at 2,927 feet in No. 1 Milke, SW cor. NE NW, Section 20-12-15w, with the 6-inch casing at 2,905 feet.

Graham County was the latest region to be favored with a new test. Keys Brothers were spudding No. 1 Toxton, SE cor. SW SE, Section 23-8s-24w.

In Ellsworth County, Martin & Pemberton and others had timbers on the ground for No. 1 Kruse, NW cor. SE NE, Section 18-17-7w.

In southwestern Russell County, the Producers & Refiners Corp. was building a rig for No. 1 Mermes, SW cor. NW NE, Section 9-14-15w.

In Harvey County, F. Wahn and others had a rig up for No. 1 Gatz.

Greenwood County

In Greenwood County, Reverly and others were spudding No. 2 Hendrickson, CEL NE NE SE, Section 22-24-9, in the Agard Pool, and Fontaine and others were drilling at 650 feet in No. 1 Honson, NE cor. SE NE, Section 27-24-9. The Roxana Petroleum Co.'s No. 3 Marshall, CSL SE NW, Section 34-24-9, was good for 150 bbls. after a 90-quart shot in sand at 2,206-47 feet.

Pierce and associates were spudding No. 1 Jackson, SW cor. NW NE, Section 25-25-8. Duncan and others also spudded No. 1 Sallyards, SE cor. NW, Section 27-25-9.

In the Browning Pool, Hazlett and others were cleaning out No. 1 De Malorie, SE cor. Section 12-22-10, after a shot of 80 quarts in sand at 2,135-68 feet and it was estimated good for 125 bbls. Total depth was 2,181 feet. Rhodes & Abel were getting 125 bbls. on the pump from No. 3 Browning, C SW SE SE, Section 18-22-10, from sand at 2,354-98 feet. R. G. Gillespie had 1,400 feet of oil in No. 4 Browning, C NW SE NE, Section 19-22-10, from sand at 2,294-2,339 feet.

Henderson & Holden were spudding No. 1 Hale, SE cor. NW SE, Section 11-23-10. The Mid-Kansas Oil & Gas Co. abandoned the location for No. 15 Allen, SW cor. NE, Section 23-23-10. The Mission Oil Co. and others shot No. 41 Thrall, CEL SW SW, Section 28-23-10, with 100 quarts in sand at 2,281-2,340 feet, with first oil at 2,301 feet and total depth at 2,345 feet and it made 65 bbls. afterward. Locations for the same interests' Nos. 42, 43, 23 and 24 were abandoned.

In the Agard Pool, the Lewis Oil Co. and National Refining Co. had a rig up for No. 3 Heidelson, CNL NW SE, Section 1-24-9. The Arkansas Fuel Co.'s No. 5 Marshall, CEL NE SW, same section, was cleaning out after a shot of 100 quarts in sand at 2,301-46 feet and was estimated good for 150 bbls. The Derby Oil Co.'s No. 1 Lewis, NE cor. Section 11-24-9, made 18 bbls. following a 140-quart shot in sand at 2,247-90 feet. Rogers and others put No. 1 Holverson, CWL NW SW, Section 23-24-9, on the pump and found it good for 140 bbls. It had swabbed 280 bbls. following a shot of 160 quarts in sand at 2,128-2,200 feet. The Mission Oil Co.'s No. 2 Wiggins, CNL NW NW, same section, which swabbed 150 bbls. after a 120-quart shot in sand at 2,131-92 feet, made 100 bbls. on the pump.

Millegan and others abandoned No. 1 Butler, SE cor. NW SE, Section 16-22-11, as dry at 2,124 feet. Simmons and others had a rig on the ground for No. 1 Hampel, NW cor. Section 18-22-11. The York State Oil Co. was drilling at 800 feet in No. 7 Malone, SE cor. Section 32-22-11.

In Butler County, the Skelly Oil Co. and Davis abandoned No. 5 Bower, CSL NW, Section 25-28-5, as dry at 2,860 feet.

In eastern Sumner County about 12 miles southwest of Winfield, the Brady Brothers had a rig on the ground for a new test, No. 1 Woods, SW cor. NE, Section 25-33-2.

In Cowley County, the Trees Oil Co. had a rig on the ground for No. 1 Shaffer, SE cor. NE, Section 10-31-3.

In the Eastman Pool, the Empire Gas & Fuel Co. was spudding No. 1-A Eastman, NW cor. Section 5-31-6, and also No. 3 Eastman, C NE NE SE, Section 6-31-6, and had a rig on the ground for No. 4 Eastman, C NW NE SE, same section. The Southwestern Petroleum Co. had a rig up for No. 7 Eastman, SE cor. SW NE, Section 6-31-6.

A duster was recorded against the pool by Titus and others when No. 1 Eastman, NW cor. SW, Section 6-31-6, was plugged as a failure at 2,941 feet.

About 7 miles due west of Winfield, T. B. Slick had a rig on the ground for No. 1 Carson, SW cor. NE, Section 19-32-3.

In the Rainbow Bend Pool, Waite Phillips Co. and others had a rig in place for No. 4 Johnson, C NW NE SE, Section 20-33-3.

The Watchorn Oil & Gas Co.'s No. 1 Heithley, NW cor. NE NE, Section 36-32-4, filled up 3,000 feet of oil in four hours from sand at 3,104-08 feet with lime at 3,100-04 feet.

TO OPEN AMARILLO BRANCH

OKLAHOMA CITY, Okla., July 21.—E. L. Hursey of the Hayes Equipment Co. of Oklahoma City has gone to Amarillo, Tex., to establish a branch office for the company. It manufactures and distributes pumps and other equipment for filling stations.

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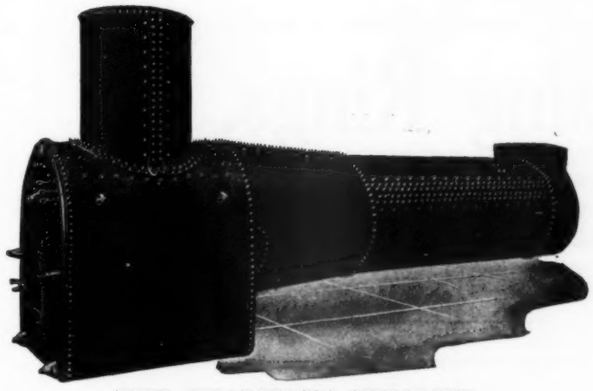

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MEXICAN FIELDS

(Continued from Page 40)

drilling in gray lime at 1,760 feet; No. 59, drilling in white lime with hole full of oil at 2,177 feet; No. 60, drilling in the Tamasopa at 1,875 feet; No. 61, drilling in gray shale at 750 feet; No. 75, drilling in white lime at 2,183 feet; No. 80, fishing in gray lime at 1,910 feet; No. 88, drilling in gray lime with a showing of oil at 1,750 feet; No. 81, drilling in pink lime at 1,520 feet; No. 82, drilling in gray shale at 900 feet; No. 95, cemented 8-inch in the San Felipe at 1,210 feet, and some three more locations rigged and ready to spud. Mexican Gulf Oil Co.'s operations in Lot 1 are: No. 21, drilling in the San Felipe at 1,125 feet; No. 27, a derrick; No. 64, drilling in gray and brown lime at 1,715 feet. Mexican Sinclair Petroleum Corp.'s No. 46, Lot 2, drilling in the Tamasopa at 1,950 feet. In Lot 3 its operations follow: No. 65, drilling in blue shale at 810 feet; No. 69, drilling in the San Felipe at 1,210 feet, and No. 73 in the same formation at 1,110 feet.

Transcontinental Petroleum Co.'s operations in Lot 4 follow: No. 7, drilling in the San Felipe at 1,460 feet; No. 90, in the same formation at 1,700 feet; No. 94, running 8-inch in the same at 1,405 feet, and this will also apply to No. 111 In Lot 1: No. 96 is drilling in the San Felipe at 1,520 feet; Nos. 104 and 106, drilling in limestone at 1,940 and 1,985 feet, respectively. In Lot 2, No. 115 is drilling in shale at 730 feet, and in Lot 5, No. 119 is drilling in the same at 290 feet. In Paciencia just north of Cacalilao, No. 6 is drilling in limestone at 1,985 feet. Mexican Petroleum Co.'s No. 10-A, Lot 1 Cacalilao, cemented 8-inch in the San Felipe at 1,350 feet, and No. 17, same, running 10-inch at 995 feet, in blue shale. Mexican Eagle Oil Co.'s No. 21, Lot 1, is drilling in gray lime at 1,650 feet.

Other Sectors

In the older sectors of the Panuco drilling operations are as follows: Aloya and others' No. 1 Tampalache (W. M.), is drilling in shale around 775 feet. Credito Petrolero, No. 2, Lot 17, Lomas y Llanos, drilling in limestone at 2,032 feet; La Corona Petroleum Co.'s No. 87 Salvasuchi, drilling in limestone at 1,300 feet, and No. 89 La Polla, drilling in a gray lime at 2,090 feet. Ita Mex Oil Co.'s No. 12, Lot 25 Tamismolon, drilling in gray lime at 2,545 feet, too deep for comfort. Mexican Sinclair Petroleum Corp.'s No. 6 Zurita is drilling in pink shale at 382 feet. New England Fuel Oil Co.'s No. 15 Piazzi, drilling in gray lime at 950 feet. Panuco Boston Oil Co.'s No. 1, Lot 17, Lomas y Llanos, drilling in the San Felipe at 2,115 feet, showing some oil; No. 1, Lot 5, Isleta, drilling in shale at 610 feet. The Texas Co.'s No. 14, Lot 17 Lomas y Llanos, is drilling in the San Felipe at 2,217 feet with a showing. Transcontinental Petroleum Co.'s No. 17 Barbarena is drilling in lime at 1,730 feet; Williamson's No. 1, Lot 4 La Canoa, (3-A) is drilling in shale at 500 feet and No. 1, same, (3-B), drilling in shale at 1,570 feet.

In the South Fields, Huasteca Petroleum Co. (Mexican Petroleum) No. 24-A and No. 29 Tierra Blanca are rigging; No. 31, same, a derrick, and there are four more locations down there being cleared. In Cerro Azul No. 46 is drilling in gray shale at 560 feet and No. 47 is a derrick. In Tres Hermanos, its No. 7 is clearing a location and No. 8 rigging. La Corona Petroleum Co.'s No. 1 San Isidro, south of Tuxpam River, is drilling in shale and sandstone at 3,250 feet. In Zacamixtle its No. 4-A, Lot 31 is drilling in shell at 1,625 feet. Cortez Oil Corp.'s No. 8 Aguada is drilling in the San Felipe at 4,021 feet. International Petroleum Co.'s No. 44 Toteco, in a hard shale at 982 feet. Lindberg & Sandoval, No. 25, Lot 2 Cloconcillo, twisted off again at 2,253 feet, and are trying to fish out. Mexican Sinclair Petroleum Corp.'s No. 13, Lot 176 Amatlan, drilling in a hard lime at 2,208 feet. Mexican Gulf Oil Co.'s No. 5, Lot 8 Tepetate, drilling in gray shale at 1,640 feet. Penn Mex Fuel Co.'s No. 3 Jardin, cemented 8-inch in the San Felipe at 2,231 feet; No. 4, drilling in shale and shell at 2,065 feet; and No. 8, drilling in shale at 550 feet. Mexican Eagle Oil Co.'s No. 24, Los Naranjos, Lot 132 Amatlan, the "deep" test split 4-inch casing near the top, and twisted off, so it is fishing again; No. 34, Lot 260 Amatlan, is bailing down to test for shallow production at 1,442 feet; No. 35-A, Lot 132, drilling in hard shale at 720 feet; No. 25, Lot 224 Amatlan drilling in shale at at 660 feet, and No. 26, Lot 226 Amatlan, drilling in a hard gray sandy lime at 2,198 feet.

Topila and Miscellaneous

In the Topila Pool, National Oil Co.'s No. 6, Lot 179, Quebrache, showed some salt water at 3,155 feet, in white limestone and some dry gas. Before the order to plug reached the field, the water exhausted itself and the dry gas turned to a wet gas, hence the drill will be sent deeper. This is rather unusual.

Southwest of the National's Quebrache test, Cortez Oil Corp.'s No. 6, Lot 58, Lagartero, is drilling at 380 feet, in white lime and chert, making considerable gas and about 8 bbls. of light gravity oil. Here was another instance of a test being ready to be abandoned when the gas and its attendant oil show suddenly appeared, which influenced sending the drill deeper. Credito Petrolero's No. 4, Lot 6, Paciencia de Aguacate, cemented 8-inch in the San Felipe at 1,607 feet. Hicks and others' No. 11, same lot and sector, cemented 8-inch in the same formation at 1,570 feet.

In the El Barco district, Mexican Gulf Oil Co.'s No. 32 is drilling in gray and brown lime at 1,826 feet; No. 36 is a derrick; No. 37, drilling in gray lime at 1,321 feet; No. 52, set 10-inch at 162 feet in shale. In the Salinas, nearby, its No. 2 is drilling in sandy shale at 155 feet; No. 5 is drilling in gray shale at 1,727 feet; No. 6 is drilling in shale at 1,500 feet. Kern Mex Oil Fields, No. 15 Las Palmas cemented 8-inch in shale and shell at 1,260 feet.

At Ebano, Mexican Petroleum Co.'s No. 38 La Dicha, cemented 8-inch in lime at 1,520 feet; No. 40, same, drilling in lime at 2,030 feet, and No. 41 rigging. All other tests are temporarily suspended on account of bad roads.

In Nuevo Leon, Agwi Companies' No. 21 Popote is drilling in lime at 1,330 feet.

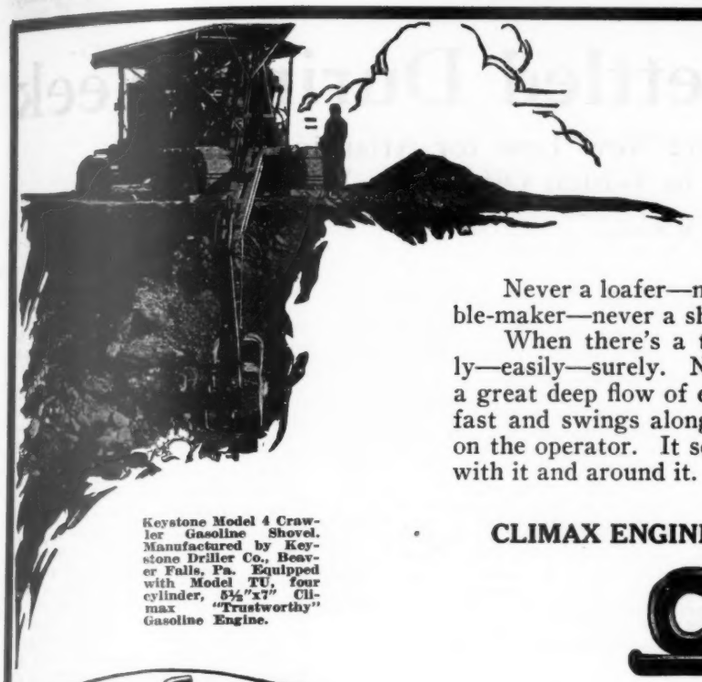
In Tamaulipas, American International Fuel Co.'s No. 11 Los Esteros is drilling in gray lime at 3,306 feet, and No. 14, rigging waiting permit. In Manuel, Mulcahey and others' No. 1 is drilling in white lime at 2,102 feet.

In Caracol, just west of Tampico, Venable and others' No. 1, Lot 21, is drilling in shale at 1,900 feet.

WHAT MOTORISTS PAY TOWARDS ROAD COST

An analysis of the various sources of highway funds since 1914 made by the bureau of public roads of the Department of Agriculture shows the following: In 1914, out of a total highway income of $240,262,784, the collections from motor vehicles amounted to $12,382,031, or 5.1 per cent of the total. In 1921, seven years later, the motor vehicle owners and operators paid $118,942,706 in motor vehicle fees and $3,685,460 in gasoline taxes, which together equaled 10.6 per cent of the total income for highway purposes.

A similar compilation of payments made by owners and operators of motor vehicles for licenses and permits in 1923 shows a total contribution on their part of $188,970,992. In the same year gasoline taxes levied by 35 States amounted to $36,813,939. The motor vehicles, accordingly contributed a total of $225,784,931, or 19.5 per cent of the entire 1923 highway income. In the six New England States this contribution is 25.1 per cent. The average annual expenditure per person per mile of road all over the United States is only 0.0054c-1c for each 200 miles of road. This ranges from 0.0015c in the West North Central States to 0.0101c per person per mile in the Pacific States.



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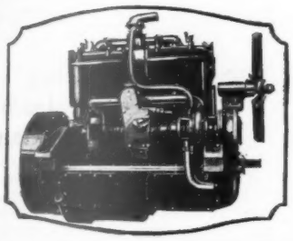

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Greiman Ditcher Co., Inc., Garner, Iowa
J. T. Tractor Co., Cleveland, Ohio
Keystone Driller Co., Beaver Falls, Pa.
Link-Belt Co., Chicago, Ill.
Locomotive Crane Co. of America, Champaign, Ill.
McMyler-Interstate Co., Cleveland, Ohio
The Mundie Manufacturing Co., Peru, Ill.
Northwest Engineering Co., Green Bay, Wis.
Orton & Steinbrenner Co., Huntington, Ind.
The Parsons Co., Newton, Iowa
Rix Compressed Air & Drill Co., San Francisco, Calif.
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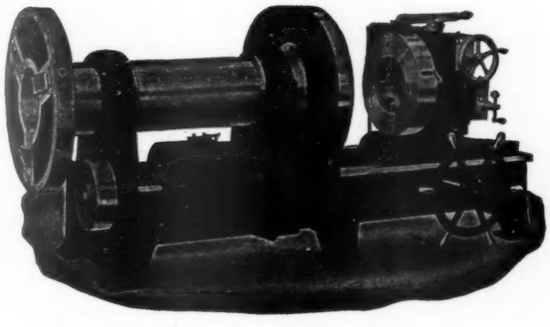

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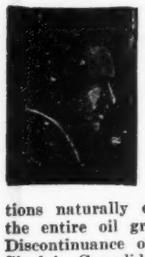
Oil Securities Unsettled During Week

Passing of Sinclair Dividend and New Low for Atlantic Refining Were Features of Market in Which Oil Group Was Weak

By N. O. Fanning
Room 543, No. 30 Church St., New York

NEW YORK, July 21.—Passing of the dividend by Sinclair Consolidated Oil Corp. was the leading event of the week in connection with oil securities. Sinclair Consolidated common dropped to a new low of 15. Atlantic refining was another weak feature, dropping to a new low of 78½. The action of the stocks of these two organizations naturally caused unsettlement in the entire oil group, which was weak. Discontinuance of common dividend by Sinclair Consolidated was attributed to the unfavorable condition of the oil business and the fact that the company has spent large sums in the last few years on extensions to its properties.



A statement issued by Sinclair Consolidated, following the meeting of the board, said: "Net earnings of the corporation for the six months ended June 30 were more than $9,000,000. This amount is about 20 per cent greater than the corporation earned in the first six months of last year and within $1,000,000 of the net earnings for the entire year 1923.

"The corporation passed its peak in borrowings some time ago and bank loans are being reduced. No additional financing is contemplated."

In the Standard Oil group traded in on the New York Curb Prairie Oil & Gas was weak, dropping to a new low for the year of 195½, evidently in anticipation of a reduction in crude oil prices by the company. This is the first occasion this year that the stock has sold below 200. New low prices for the year were also registered by Imperial Oil, Ltd., Standard of Indiana and South Penn Oil.

Union Tank Car

An exception to the general weakness in the oil group was Union Tank Car common, which sold up to a new high for the year at 110. This company has paid dividends at the rate of 5 per cent (par $100 per share) but in 1923 net earnings were equivalent to more than $18 per share. An increase in the dividend rate to 7 per cent is looked for in some quarters.

National Transit Co.

Judge Thomson in the United States District Court of Pittsburgh, Pa., has handed down an opinion refusing a motion for a new trial asked by the National Transit Co. against John Barton Payne, former director general of railroads. Payne was awarded a verdict of $221,848 against the Transit company, this amount representing a verdict obtained against him as director general of railroads with interest for three years by the Joseph Reid Gas Engine Co. of Oil City, Pa. The case brought out that the Transit company, under contract with the Erie railroad, laid oil pipe lines beneath the tracks of the railroad. The pipe line leaked and escaping oil ignited a hot cinder from a passing locomotive and spread to the plant of the engine company and destroyed it. The opinion cites that the transit company was given notice to appear and defend the action but failed to do so.

Houston Oil Earnings

Houston Oil Co. of Texas for the six months ended June 30, 1924, reports net income of $1,593,047 after taxes, depreciation and depletion, equivalent after preferred dividends to $5.30 per share earned on $24,968,600 common stock outstanding.

The income account for the six months ended June 30, 1924, compares as follows:

	1924	1923
Gross earnings	$3,150,015	$1,459,267
Miscellaneous income.	*125,017	.....
Total income	$3,275,032	$1,459,267
Expenses and taxes...	1,191,806	524,935
Balance	$2,083,226	$ 934,332
Depreciation	171,404	.....
Depletion	318,775	.....
Net income	$1,593,047	.....
Preferred dividends	268,428	.....
Surplus	$1,324,619	.....
Profit and loss surplus	4,663,189	.....

*Includes $120,884 from sales of capital assets.

For the quarter ended June 30, net earnings of Houston Oil Co. were $783,114 after expenses and taxes, but before depreciation and depletion, comparing with $521,270 in the second quarter of 1923.

Income account for the quarter ended June 30, 1924, compares as follows:

	1924	1923
Gross	$1,229,343	$818,102
Expenses and taxes	446,229	296,832
*Net earnings	$ 783,114	$521,270

*Before depreciation and depletion.

The Oil Situation

The fact that up to the end of June the oil business was still adding crude oil to storage at a high rate was looked upon in financial circles as an unfavorable sign. With only three or four months of heavy consumption before it, it is considered doubtful by some whether the position of the oil industry will be much better at the close of 1924 than at the close of last year, barring an unexpected gain in consumption during the closing months of the year or an unforeseen drop in crude oil production. Piling up of stocks naturally increases the overhead of oil companies and cuts down profits accordingly. Therefore, many believe that the improvement shown in financial statements of oil companies for the first half of 1924 will be offset by unfavorable reports for the last half.

Lower oil prices will undoubtedly hurt some oil companies more than others. Many concerns have doubtless adjusted themselves to the idea of low prices. Therefore their earnings, even though prices are cut further, may turn out better than would be expected.

There is always the element of uncertainty to be taken into account in the oil business. Despite the present statistical position of the industry, few, if any, can tell what it will be at the close of 1924. Those who believe, however, in the inherent soundness of one of America's greatest industries, and in the soundness of the established companies, will not take anything for granted concerning the future of the oil business.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock—	Par	§Dividend Rate	Closing Quotations July 21	July 14	Range 1924 High	Low
1.	American Republics	..	..	*25	36	43	25
2.	Associated Oil	25	6	*28½	*28	34⅝	27⅝
3.	Atlantic Refining, common	100	4	84½	87½	140⅜	83½
4.	Barnsdall "A"	25	..	20⅝	19⅝	18⅞	14
5.	California Petroleum, common	25	7	22	21¼	29¼	21⅝
6.	Cosden & Co., common	..	..	27⅝	26⅜	40¼	23½
7.	General American Tank	..	†3	40⅝	40⅝	46¼	38¼
8.	General Asphalt	100	..	43½	43⅜	49	31⅜
9.	General Petroleum	25	8	43½	40½	41½	38⅜
10.	Houston Oil	100	..	70⅜	69½	82½	61
11.	Independent Oil & Gas	10	..	7	7⅝	9¼	6⅜
12.	Indian Refining	10	..	*6½	6½	7	3⅝
13.	Invincible Oil	50	..	12⅝	12¼	15⅝	11⅝
14.	Maracaibo	..	..	28½	28¼	37½	25⅝
15.	Mariand	..	..	31	29⅝	42	29
16.	Mexican Seaboard	..	..	20⅜	20¼	24½	14½
17.	Middle States Oil	10	..	1⅝	1⅝	6⅝	1⅝
18.	National Supply	50	6	*55¼	57¼	72¼	56
19.	Pacific Oil	..	†2	47⅞	46⅞	58½	45
20.	Pan-American common	50	†6	52⅛	51½	61¼	44¼
21.	Panhandle Prod & Ref.	..	..	2⅜	*2¼	4½	2¼
22.	Phillips Petroleum	..	†2	34¼	33⅛	42¼	32⅜
23.	Producers & Refiners	50	..	26	25⅜	43½	22⅜
24.	Pure Oil, common	25	6	21¼	20⅝	26⅝	20
25.	Royal Dutch, N. Y. sh.	13.40	2.62	49⅛	49⅛	59½	48
26.	Shell Transport	10	x92½	34⅝	*35	41½	33
27.	Shell Union, common	..	†1	17¼	16⅝	20⅛	16¼
28.	Simms Petroleum	10	..	13	12¼	14⅞	10⅝
29.	Sinclair Consolidated, common	..	..	17	16½	27½	16
30.	Skelly Oil	25	..	19	18	29	17¾
31.	Standard of California	25	8	57⅜	56⅜	68½	55½
32.	Standard Oil of New Jersey	25	4	34⅝	34½	42¼	33
33.	Standard of New Jersey, pfd.	100	7	117⅜	118¼	118⅝	116⅜
34.	Superior Oil	..	..	7⅝	7¼	7⅝	2⅝
35.	The Texas Co.	25	12	39⅜	38⅞	45⅝	37⅜
36.	Texas Pacific Coal & Oil	10	..	9	8⅝	15¼	8¼
37.	Tide Water Oil	100	4	*117	*123	151	113
38.	Transcontinental	..	..	4½	4½	6¼	3⅝
39.	Union Tank, common	100	5	104	106	110	94
40.	White Eagle Oil & Refining	..	2¼	24	23⅝	29⅝	23½
	Standard Oil Stocks						
41.	Anglo-American Oil	£1	25	15	*14½	18	14⅜
42.	Borne Scrymser	100	12	217	*220	264	150
43.	Buckeye Pipe Line	50	14	*59½	*62	85½	60
44.	Chesebrough Mfg., common	25	10	*49¼	*49½	53⅜	29¼
45.	Continental Oil, Ltd.	25	8	*38½	*38	54⅞	42½
46.	Crescent Pipe Line	25	..	*11⅜	*11⅜	20	16
47.	Cumberland Pipe Line	100	10	145	*130	144	109
48.	Eureka Pipe Line	100	8	96¼	*94	105	95
49.	Galena-Signal, common	100	4	56½	*54	69¾	55¼
50.	Humble Oil & Refining	25	4.8	36⅛	*36⅛	43¾	36
51.	Illinois Pipe Line	100	12	*132	*132	161	131
52.	Imperial Oil, Ltd.	25	12	101	99¼	119	99
53.	Indiana Pipe Line	50	16	*90	92½	100	85
54.	International Petroleum Co.	100	x50	17⅞	17½	22¼	16⅞
55.	Magnolia Petroleum Co.	100	4.5	125	*125	160	124
56.	National Transit	12.50	16	21⅜	21⅜	25⅞	21¼
57.	New York Transit	100	10	*64	*64	97	69
58.	Northern Pipe Line	100	6	*81	*82	107½	80½
59.	Ohio Oil Co.	25	8	58⅝	60¼	79½	60
60.	Penn-Mex. Fuel	25	..	32	*23	45⅝	32¼
61.	Prairie Oil & Gas	100	8	205	205½	269	204½
62.	Prairie Pipe Line	100	8	103	*102½	111	100
63.	Solar Refining Co	100	15	180	*180	225	170
64.	Southern Pipe Line	100	16	94⅜	*95	100	89½
65.	South Penn Oil	100	..	*123	123½	176	130
66.	South West Pa. Line	100	8	86	85½	89	80
67.	Standard of Indiana	25	10	56⅛	55⅝	58⅜	55⅝
68.	Standard of Kansas	25	8	39½	38⅝	50½	38⅝
69.	Standard of Kentucky	25	16	110⅜	108¼	120	102¼
70.	Standard of Nebraska	100	20	238	231	256½	198
71.	Standard Oil of New York	25	5.6	39¼	38⅜	48	37⅜
72.	Standard of Ohio, common	100	10	284	286½	236	277
73.	Swan & Finch	100	..	40	*37	81	34
74.	Vacuum Oil	25	10	62⅜	61⅝	69¼	56⅛
75.	Washington Oil	10	10	*28½	*28½	29	25
	Miscellaneous Stocks						
76.	Cities Service, bankers' shares	..	†21	13⅛	15⅝	16	13¼
77.	Gulf Oil Corp. of Pennsylvania	25	6	57	57	65	56⅝
78.	Mutual Oil	5	10	10⅛	9⅝	14	9⅝

*Bid, no sales. †In dollars. §The figures in this column are kept up to date as far as possible, but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

July 21	48.28	June 17	47.94	May 13		48.24
July 14	46.96	June 10	47.63	May 6		49.46
July 7	48.28	June 3	48.88	Apr. 29		49.56
June 30	47.69	May 27	49.01	Apr. 22		46.77
June 23	46.92	May 20	48.25	Apr. 15		50.03

Sun Oil Co. Setting Pace in Petroleum League Ball Games

The Sun Oil Co. is setting the pace in the Petroleum League baseball race, interest in which is tending to take the minds of employes at least of the various oil companies with headquarters in Tulsa from the problems of proration, curtailed purchases and price reductions. Each of the other five teams in the race, however, has a good chance to win the last half of the split season schedule and it would not be surprising to see a change in the general standing of the teams at the end of next week.

The schedule of games for next week will bring together teams which are well matched and among whom the greatest rivalry of a friendly nature has prevailed. The result of these games will go a long way towards indicating the winner of the second half of the season and the team which will play the Carter Oil Co. for the championship of the league, Carter having won the first half of the season.

The schedule of the Petroleum League games for the remainder of this week and for next week follows:

July 23—Pure Oil Co. vs. The Oil and Gas Journal.

July 24—Skelly Oil Co. vs. Sun Oil Co.

July 25—Pure Oil Co. vs. Carter Oil Co.

July 26—Waite Phillips vs. The Oil and Gas Journal.

July 28—Pure Oil Co. vs. Skelly Oil Co.

July 29—Carter Oil Co. vs. Wait Phillips.

July 30—Sun Oil Co. vs. The Oil and Gas Journal.

July 31—Pure Oil Co. vs. Waite Phillips.

Aug. 1—Carter Oil Co. vs. Sun Oil Co.

Aug. 2—Skelly Oil Co. vs. The Oil and Gas Journal.

GOV. FUQUA VETOES OIL BILL

BATON ROUGE, La., July 21.—Governor Fuqua's first veto returned to the house, Bill 66, by Representative Paul E. Chasez, providing against the pollution of fresh water streams by dumping oils, without his signature. Executive objection was raised to the bill because no provision was made to cover and protect water bottoms leased by the State for oil purposes, as in the case of Caddo Lake.

GULF COAST

(Continued from Page 54)

3,154 feet, No. 33 is doing the same at 3,325 feet and a derrick is standing for No. 43. No. 6 Thomas is drilling at 3,415 feet. On the south side, the Gulf Co.'s No. 10 Baldwin is at 2,735 feet and the Humble Oil & Refining Co. has a location for No. 10 Hooks-Spells. A derrick is up for the Houston Production Co.'s No. 12 Barngrover. Very little development has been done on the south side of the dome for more than one year. To the southwest the joint No. 3 Hannah of The Texas Co. and Vacuum Oil Co. is drilling at 1,235 feet. Coming upon the west side of the dome the Gulf Co.'s No. 15 Hannah fee is drilling at 2,655 feet and the Humble Oil & Refining Co.'s No. 1 Hannah at 3,010 feet. The same company's No. 5 Marshall is deepening at 1,309 feet, repeating what has been stated before in these reviews the Hull Dome is the only pool having production on all sides of the elevation.

South of Devers, D. J. Harrison and Gulf Co.'s joint No. 2 is drilling around 1,755 feet.

Harris County Pools

The Goose Creek Pool presents a fairly large list of completions this week, but all are small wells and in the deep sands. The Humble Oil & Refining Co.'s No. 30 Schilling is going on the jack at 3,125 feet and No. 33 is pumping 75 bbls. at 4,480 feet. No. 27 Galliard Peninsula is flowing 350 bbls. by heads at 4,200 feet. No. 58 Smith and 26 Sweet are bailing at 2,500 feet and 4,475 feet respectively. No. 3 Harrell was abandoned at 4,560 feet. The Gulf Production Co.'s No. 19 Smith is bailing at 2,800 feet and No. 11 Briggs was abandoned at 3,600 feet. Gulf Coast-United Central Oil Co.'s joint No. 37 Galliard is pumping 75 bbls. at 4,450 feet. The Southern Exploration Co.'s No. 5 Wright is bailing at 2,400 feet and the Goose Creek Oil Co.'s No. 5 Freeman in the bay is doing the same at 2,775 feet. The J. R. Copeland Oil Co.'s No. 5 Bryan, which came in last week rated as a 450-bbl. well is making 35 per cent water now.

The Humble Oil & Refining Co.'s No. 14 Galliard 25 acres is rigging to be worked over. No. 51 is drilling around 4,370 feet. No. 56 Smith drilling at 2,785 feet and No. 11-A Tabb is rigging. The Gulf Production Co.'s No. 26 Beaumont in the bay is drilling at 3,190 feet. No. 11 State land, also in the bay waters, is drilling at 1,415 feet and No. 29 Beaumont at 2,565 feet. No. 3 Hirsch is at 3,476 feet. No. 3 H. Galliard is working over, with a location made for No. 21-A Wright.

The Sun Oil Co.'s No. 1 Bartlett-Smith sanded. No. 8 is being sidetracked. The Gulf Coast-United Central Oil Co.'s No. 28 Galliard is working over. The Inca Petroleum Co.'s No. 4 Duke is drilling at 2,798 feet and the La Rue Oil Co.'s No. 5 Dannebaum at 1,110 feet. The Hisgen Petroleum Co.'s No. 2 Busch, northwest of production, is drilling at 2,775 feet.

In the Humble Pool, the Southern Petroleum Co. is working over No. 37 Landslide. Dr. J. L. Taylor and associates of Houston have organized the Rolyat Oil Co. and have taken over the Cherry 8½ acres, on which is two wells with a daily production of 80 bbls.

In the Pierce Junction Pool, the Gulf Production Co.'s No. 16 Taylor is drilling at 3,345 feet and the Atlantic Oil Producing Co.'s No. 1 Ross at 3,465 feet.

Brazoria County Pools.

At West Columbia, The Texas Co.'s No. 80 Hogg is drilling at 2,556 feet and No. 81 Hogg at 2,785 feet. No. 11 Abrams is at 2,900 feet. The Humble Oil & Refining Co.'s No. 2 Badge is drilling around 4,060 feet and No. 6 Tyndale-Wyoming is below 2,510 feet. The Gulf Co.'s No. 6 Tom Hogg is at 1,170 feet. All these are on the north and northwest sides of the dome. In the old section of the pool the Sun Oil Co.'s No. 3 Robertson is being worked over at 3,150 feet. The Hyde Production Co. has one of the remarkable wells in that pool. It came in 3½ years ago at 2,515 feet, flowing 1,000 bbls. and held up at 800 bbls. for over two years. The well is still flowing an average of 180 bbls. by heads.

At Damon Mound, the Humble Oil & Refining Co.'s No. 2 Smith on the north side was abandoned as a junked hole at 4,415 feet. The Sinclair Oil & Gas Co. went into rock salt on one of the strips taken from the Gulf Co. on the north side of the dome. The same company has one rig running on the Masterson.

The Sinclair Oil & Gas Co.'s No. 1 Perry on the south side of the Stratton Ridge Dome is drilling below 1,615 feet. The Rycade Petroleum Co.'s No. 1 Wisdom, 7 miles southeast of Damon Mound, is around 585 feet.

Ford Bend County Pools

In the Blue Ridge Pool, the Gulf Production Co.'s No. 5 West—Schenck on the south side of the dome, is drilling at 3,190 feet and No. 9 Blakely on the east side at 1,818 feet. No. 1 Invincible on the southwest side is around 1,875 feet. The Texas Co. has a location for No. 12 Robinson on the northwest side.

Rich & Maxudian's No. 1 Ahlers in the Big Creek Pool is fishing. The Oil Production Co.'s No. 2 Ahlers there is shut down. The Gulf-Snowden and McSweeney interests have three rigs running there. The Neilan Oil & Refining Co. abandoned No. 3 Thompsons at 3,800 feet. The Gulf Development Co.'s No. 3 Vogel is drilling around 1,800 feet, with some gas pressure showing. Paul Schulte and associates of Chicago, who drilled a deep test in the Markham Pool, will drill a series of formation tests between Big Creek and Richmond. The Pathfinder Oil Co.'s No. 3 Davis, northwest of Big Creek, is around 900 feet.

Other Pools

In the Spindletop Pool, the deep test of the Rycade Petroleum Co., No. 1 Gladys, is drilling below 3,065 feet. The Gulf Co.'s No. 207 Gladys is drilling at 545 feet and the Unity Oil Co.'s No. 84 McFaddin at 870 feet. John Wynee is setting perforated pipe in No. 1 Sunshine.

In the Markham Pool, the Rycade Petroleum Co.'s No. 2 Myers is drilling at 1,816 feet and No. 1 Sisk at 1,675 feet. The Gulf Production Co.'s No. 1 Caney Cattle Co. lands, in the southern part of Matagorda County, is drilling around 775 feet.

At Barber Hill, in Chambers County, the Kirby Petroleum Co.—Mills Bennett's joint No. 1 McKinney, on the southeast side of the dome, is drilling at 1,435 feet. The Texas-Kirby Petroleum Co.'s No. 1 joint, one mile east of the elevation, is drilling at 955 feet.

Jennings-Edgerly (La.)

In the Jennings Pool, The Texas Co.'s No. 43 Latrielle is fishing at 1,565 feet. The Caladian Production Co.'s No. 41 is drilling at 2,075 feet. The Gulf Refining Co. is rigging No. 34 Jennings-Clement. F. I. Getty is bailing No. 11 Chicago-Jennings at 1,830 feet and the Coastal Fuel Oil Co.'s No. 80 is doing the same at 1,650 feet. The Fontenot Oil Co.'s No. 5 fee is bailing salt water at 1,900 feet.

In the Edgerly Pool, G. W. Gray's No. 13 Hilliard is rigging to work over. Evans & Stoval's No. 2 Wilson is setting a liner at 2,700 feet.

The Vacuum Oil Co. is drilling No. 7, north of Lake Charles. Four of the previous tests have been abandoned.

Effect of Tides in Gulf

The Gulf Production Co.'s No. 23 Phoenix in the Hull Pool, is flowing 2,000 bbls. at 2,300 feet. In the West Columbia Pool, The Texas Co.'s No. 81 Hogg is drilling in sand around 2,800 feet. No. 58 Hogg, an old flowing well there, increased its output from 1,300 to 1,800 bbls. per day, due to tidal influences. The effect of the tides in the Gulf of Mexico are noted on producers in these saline dome fields, especially at Goose Creek, Humble, West Columbia, Spindletop and Orange. The increase or decrease in the output of the wells are more marked during July, August and January than during other months.

In the Orange Pool, the Mutual Oil Co.'s No. 2 Chesson is setting strainer at 2,360 feet and taking a core of the formation in No. 3 Chesson at 4,275 feet. Both are old holes that have been deepened. No. 13 Chesson is drilling below 4,000 feet.

Southwest Fields

Tank car shipments of crude from the Laredo Pools totaled 498 for the first 15 days of July, against 438 bbls. during the same period in June. The Magnolia Petroleum Co.'s No. 11 in the Mid-Ojulas Pool is making 100 bbls. at 1,680 feet.

The Owens Refining Co., which buys the production in the Rockdale-Minerva shallow sand pools of Milam County, has posted $1.30 for 39 gravity and above. The Magnolia Petroleum Co.'s quotations remains at $1.80, but it is not buying crude there. Lee & Lee's No. 2 Lee, west of Rockdale, is pumping 40 bbls.

The Boyd Oil Co. abandoned No. 1 near Shriner, McMullen County, on account of lease difficulties. A location has been made by the San Balt Oil Co for a test. The Coyle-Concord Oil Co. has been given permission to drill five wells in the bed of the Frio River, following a decision that the land belongs to the State Land Department.

Johnson and others have a rig east of Devine, Medina County. In Wilson County, the Rosalie Oil Co.'s No. 1 Dunning, northeast of Stockdale, has spudded in. The Simms Oil Co. has started to clean an old hole drilled by the United Packers Oil Co., near Sandia, Jim Wells County, which showed salt water. It will be deepened. The Humble Oil & Refining Co.'s No. 3 Welsh, at Noleda, Duval County, is at 2,900 feet. The Union Sulphur Co. is drilling sulphur tests to 600 feet on Palangana Dome.

Down on the border, the Berkshire Petroleum Co.'s No. 1, in Starr County, is drilling around 2,900 feet and the Mercedes Oil & Gas Co. is casing off water in No. 3 Kelsey, at 1,760 feet. In Hidalgo County, the Peoples Oil & Gas Co.'s No. 1 is drilling around 2,875 feet. The Black test, near Eagle Pass, has been abandoned, the casing pulled and shipped across the Rio Grande River into Mexico for a test northeast of Monterey.

John Sigmund abandoned No. 3 at

(Continued on Page 110)

NATURAL GASOLINE OPERATORS MEET

(Continued from Page 23)

the oil in the middle of the oil film or the oil next to the box surface. This slide also showed the displacement of the bearing within the film of oil due to the rotation and the pressure due to forcing in oil from the top.

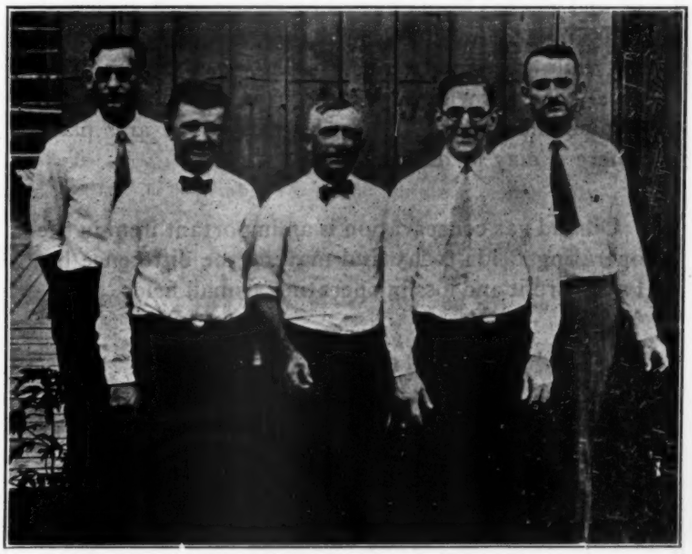
"Operating temperatures are very important," he said. "Bearing pressures also should be known as well as the speed of the bearing in operation and the method of applying the oil. We should try to use the right oil in the right place. Lubrication is a matter of substituting fluid friction for solid fricton. Heavy oil generally is used for heavy work, but heavy oil is not always the most efficient. Lubrication often gets the blame for mechanical defects. All oils decompose under work. The quality of an oil depends upon its rate of decomposition and the effect of this decomposition upon the machines in which it is used," he concluded.

"Safety work should appeal to everybody because it produces lower operating costs, gives greater physical and financial benefit to the employe and lessens the number of disabled and maimed people which are made public charges," declared Elmo D. Murphey, safety engineer for Cosden & Co. in his talk, "Stumbling Blocks and Safety." Mr. Murphey said safety work should appeal to everybody as a form of self preservation. He recounted the growth of regard for human life in business, telling the operators that accidents in the United States during 1923 were responsible for the equivalent of 750,000 men losing a year's time each. On the other hand he showed how safety work had reduced one large company's accidents 40 per cent in 8 years.

"If the workmen of the United States were to have no accidents in one year, they would increase their earnings a total of $1,200,000,000," he said.

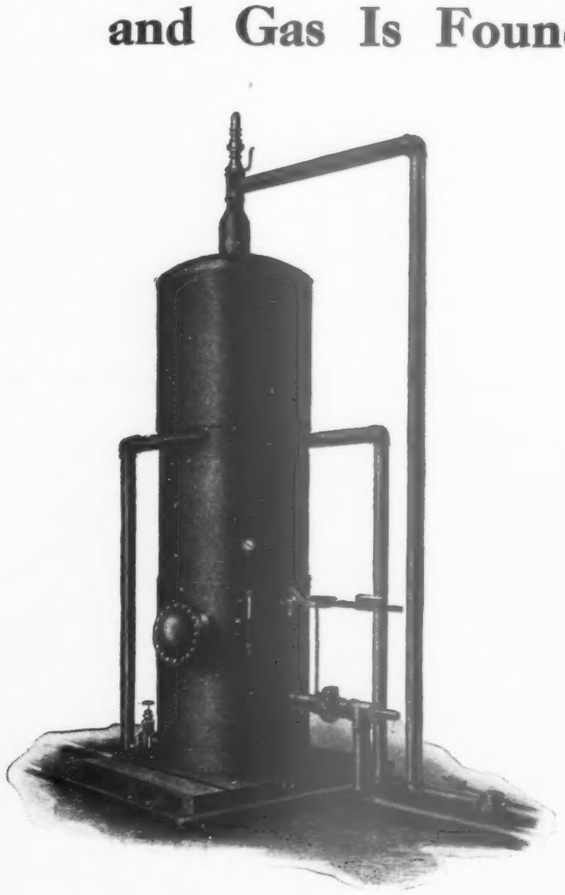
Some of the stumbling blocks in the road of safety work were enumerated by Mr. Murphey as follows: Lack of information; hard-boiled and calloused attitude of workmen; lack of cooperation by company officials; lack of educational methods; willingness of workmen to take chances; spasmodic interest in safety; routine work; and lack of training in heavy work.

Some of the specific safety points stressed by Mr. Murphey for the benefit of the operators were explosion hazards, oiling hazards and hand tool hazards. He declared that 17 per cent of the accidents of one large company during the past year were due to handling of hand tools. He stated that one of the biggest aids in securing safe working conditions was the application of "do unto others as you would have them do unto you."



Men prominent in development of regional meetings. Left to right: A. J. Schlosser, Barnsdall Oil Co.; O. H. Schonwald, McCaskey & Wentz; R. R. Owen, Mariand Refining Co.; A. V. Bourque, secretary Association Natural Gasoline Manufacturers, and W. A. Melton, Liquified Petroleum Gas Co.

Trumble Gas Traps are Found Wherever Oil and Gas Is Found



For many years Trumble Oil and Gas Separators have been used all over the world and a saving of both oil and gas has been effected by their use. A saving of oil is effected by holding the lighter constituents in the oil while the separation is taking place, under pressure. The gas when separated from the oil is confined to pipe lines where it may be carried to any place where it may be desired.

Oil and gas conservation is an important item in the operating fields today and may be the difference between profit and loss in operating a small field.

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LOS ANGELES, CAL. **SALES MANAGER**

Eastern Representative:
C. F. CAMP
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TULSA, OKLAHOMA

DRILLED 2,000 FEET BEFORE DRAKE'S TIME

(Continued from Page 28)

and act as reamers in rounding out the hole.

Changing Bits

The stem ends in a slightly expanded head. A sheath made of four flat strips of bamboo is securely bound to the stem and head by hemp cord. At the other end of the sheath is a piece of 2-inch pipe 10 inches long in which slides the square end of a bar of iron weighing about 75 pounds which may be called the sinker bar. The sinker bar has about 6 inches play in the sheath. On the up stroke a square head on the end of the bar strikes the bottom of the sheath and thus produces the same effect as the ordinary jars.

In changing bits a half hitch is taken around the stem below the jars, the hemp binding of the upper part of the sheath is cut with a knife, the jars are swung back to a hook on the posts supporting the trip pole (Sampson Posts) and the bit and stem are lifted from the hole by the crew. Another bit and stem are swung into the hole and attached to the jars and sinker bar by tying up the bamboo sheath with hemp cord.

Many forms of fishing tools have been devised. Most are spears, grabs or sockets. A combined spear and bamboo socket is much used in fishing for small articles.

Before starting to drill a hollow wood or stone conductor is put around the hole for the first 18 feet. When drilling starts an 18½-inch bit is usually used for the first 120 to 250 feet. Heavy, very neatly turned and jointed, wooden casing is set at this depth to shut off surface water. The inside diameter of the casing is 8 to 10 inches. The remainder of the well is carried down with an 8-inch or smaller bit. Below the first 120 to 250 feet no casing is ever used. The deepest wells have more than 4,000 feet of open hole.

Use No Casing

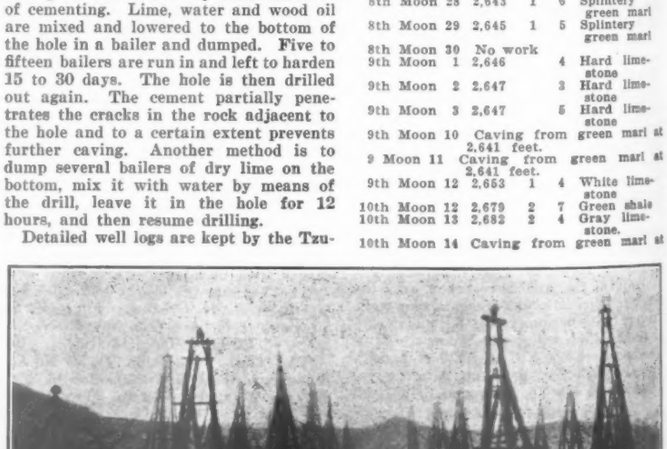
Considering the depth of the wells it is remarkable how well they stand up without casing. A few beds of shale and one bed of soft, light green, splintery marl, well known to the Chinese drillers under the pet name of "Lou-Day" or "Green Beans Rock" sometimes give trouble. An attempt is usually made to prevent the caving of certain beds by crude methods of cementing. Lime, water and wood oil are mixed and lowered to the bottom of the hole in a bailer and dumped. Five to fifteen bailers are run in and left to harden 15 to 30 days. The hole is then drilled out again. The cement partially penetrates the cracks in the rock adjacent to the hole and to a certain extent prevents further caving. Another method is to dump several bailers of dry lime on the bottom, mix it with water by means of the drill, leave it in the hole for 12 hours, and then resume drilling.

Detailed well logs are kept by the Tzu-Liu-Ching operators. They are of interest in showing the progress made by the drillers through the various formations and in giving information as to the time lost through various fishing jobs, cementing, etc. A translation of parts of a typical log is given below:

Date	Drilling at ft.	Amount feet	Drilled in	Character of rock
7th Moon 22	142		0	Red sandstone
7th Moon 23	145	3	3	Red sandstone
7th Moon 24	148	3	9	Red sandstone
7th Moon 25	150	2	4	Red sandstone and shale
7th Moon 26 to 11th Moon 10th day				

Bailing the well

		reaming out hole, setting 146 feet of 18-inch casing, preparing to continue work, etc.		
11th Moon 11	156	4	1	Gray shale and sandstone
8th Moon 23	2,630	2	4	White limestone
8th Moon 24	2,632	3	7	Limestone & white shale
8th Moon 25	2,636	2	2	Gray limestone
8th Moon 26	2,638	3	1	Gray marl
8th Moon 27	2,641	2	2	Splintery green marl
8th Moon 28	2,643	1	6	Splintery green marl
8th Moon 29	2,645	1	5	Splintery green marl
8th Moon 30	No work			
9th Moon 1	2,646		4	Hard limestone
9th Moon 2	2,647		3	Hard limestone
9th Moon 3	2,647		5	Hard limestone
9th Moon 10	Caving from 2,641 feet.			green marl at
9 Moon 11	Caving from 2,641 feet.			green marl at
9th Moon 12	2,653	1	4	White limestone
10th Moon 12	2,679	2	7	Green shale
10th Moon 13	2,682	2	4	Gray limestone.
10th Moon 14	Caving from			green marl at



Town lot drilling at Tzu-Liu-Ching.

					2,641 feet. Broke line. Fishing to 11th noon 25th day. Cemented and let set until 12th moon 18th day. Continued drilling.
12th Moon	18	2,684	2	0	Gray limestone
12th Moon	19	2,686	1	7	Gray limestone

Drilling is not unduly slow considering the crude methods in use and the character of the rocks. The best estimate that can be obtained shows that some four feet of hole a day can be made for the first 2,400 feet. Below this level the character of the rock changes from sandstone and shale to limestone and progress is slower. Drilling speeds and costs are approximately as follows:

Depth.	Time to drill	Total cost gold $
1,200	10 months	*$ 3,500
2,400	2 yrs. 0 months	7,750
3,000	2 yrs. 8 months	10,500
3,600	3 yrs. 6 months	14,000
4,000	4 yrs. 4 months	17,500

*Cost of first 1,200 feet is high on account of including the cost of preparatory setting casing, etc.

The rigs cost $2,000 to $3,000 according to their height. Equipment, including houses, rig, tools, casing and line, costs about $7,500. Wages in the field run from $.11 to $.22 a day and board (rice, parched corn and "once in a while" a little pork; with a bonus when the monthly drilling average exceeds a fixed figure. The crew consists of 11 men a shift, 12 hours on and 12 hours off.

Bamboo pipe line and man-power pump house at the top of the elevation

Natural Gas Found

Natural gas is found in several horizons, but at the present time most of the production is between 3,250 feet and 3,400 feet and again between 3,800 feet and 3,900 feet. The most prolific salt water sands are at 3,100 feet and when a well is drilled deeper it is for the purpose of securing gas alone. Gas is used in evaporating the salt water from the brine wells and to some extent for domestic uses, but it is not employed as fuel under steam boilers. The flow is never strong and issues at little pressure. The best well in the field came in 28 years ago, and yields approximately 400,000 feet a day at present. Since the Chinese do not have metal pipe they have not succeeded in piping gas, but are forced to burn it on the spot. Salt water is pumped at high cost to the gas wells for evaporation instead of piping gas to some centrally located low point to which the water would flow by gravity.

After a gas well is drilled in, a cement lined chamber about 10 feet square is rather ingeniously constructed below the floor of the rig. From this chamber one to five large cement conduits lead on a gentle slope to a series of orifices where the gas burns under cast iron evaporating pans four feet in diameter. The number of pans depends upon the flow of gas and varies from a single pan to 420. The mouth of the well is in the center of the chamber and a similar hole is made in its top immediately over the mouth of the well. This hole is left constantly open. The draught caused by the heat at the evaporating pans is not only strong enough to cause all the gas to flow in that direction but also even creates a downward flow of air into the chamber where it mixes with the gas. The well can be cleaned, drilled deeper or bailed through the open hole without interfering with the flow of gas or the operation of the evaporating plant.

Bailer of Bamboo

In the production of salt water the old-fashioned method is to rig up a bailer attached to the bull wheel after the well is drilled in. A pliable, strong rope made of twisted split bamboo is passed over the crown pulley and brought down to the bull wheel. A bailer 60 feet long is used. It is made of straight sections of bamboo 10 to 40 feet long by 4 inches in diameter fitted together in joints. Grooved rings are cut around the bailer over 3 to 6 inches and are wrapped flush with cord which is sometimes covered with soldered strips of tin. At the bottom is a leather valve which is tripped by a coolie with a hook when the bailer is brought to the surface. A team of four to five water buffaloes furnishes power for this system of bailing.

In the more modern system the same type of bailer is used, but a much higher derrick is built and bailers up to 140 feet long are employed. The essential difference in the old and the new systems is the use of steam as motive power in hoisting. Thirty to forty horsepower boilers and reversible single-drum hoisting engines are used. Half-inch steel cable is run upon the drum except for a few hundred feet at the bottom, where bamboo cable is used in the portion which enters the salt water. A round trip is made every five minutes, with bailers which hold about 3 bbls. of water.

The salt water, delivered at the surface, is sold at the well to the companies which own the evaporating plants. It is turned over to pipe line companies which gauge near the well, give the well owners run tickets and deliver to the refiners according to gauge at the plants. Gauging is done by filling alternately two small gauging tanks holding about 2 bbls. each and turning them, when full, into the pipe lines.

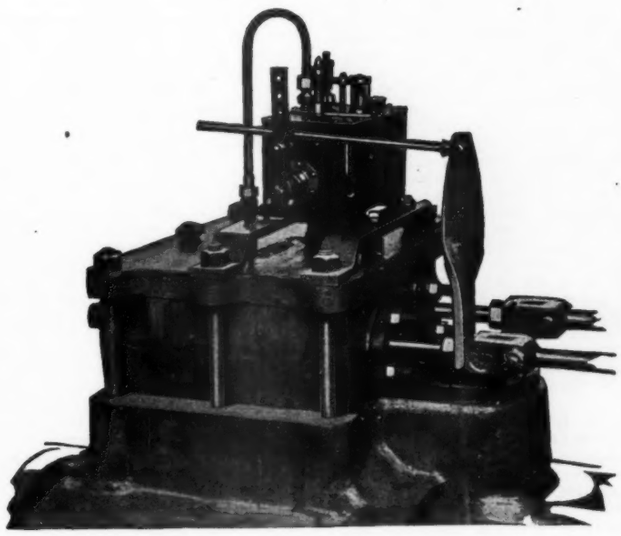
Pipe Lines, Too

The pipes are made of bamboo joints 20 to 40 feet long and 3 to 4 inches in diameter. The bamboo is split open, the nodes are cut out, and then the pipe is heavily wrapped with bamboo fiber which is frequently wedged to give greater tightness. Joints are carefully wrapped and caulked. The lines are laid on the surface or on trestles usually in groups of 3 to 7. They are sometimes several miles in length and form a unique and striking feature of the scenery of the district.

Since the evaporating plants are usually run with gas and are located at the gas well, which are often on high ground, a large amount of pumping is necessary. Some water is carried uphill by coolies carrying two buckets on a stick. The pipe line companies usually install a series of pumping stations. The water flows by gravity from the top of a low station to a tank built beneath the next higher station and there is lifted about 30 feet in the station house by an endless chain of buckets. Mules or water

(Continued on Page 112)

McCord Force Feed Lubricators



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McCord Lubricators on your slush pumps assure their efficient, continuous operation

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Late News From the Fields

OKLAHOMA

In the Cromwell Pool, the Burke-Greis Oil Co. deepened its No. 1 Brown, SW cor. SE SW, Section 10-10-8, to 3,525 feet in sand topped at 3,435 feet, and increased its production to 3,425 bbls. in 24 hours. The McMan Oil & Gas Co.'s No. 1 Little SW cor. SE, same section, topped the sand at 3,388 feet (cable measurement) and was making 2,000,000 feet of gas with the sand just scratched. The Carter Oil Co. deepened its No. 1 P. Stidham, NW cor. NE SW, Section 15-10-8, discovery oil well of the pool, to 3,526 feet in sand reached at 3,480 feet and increased it to 1,861 bbls. Its initial production at old depth of 3,505 feet was 370 bbls. and at time of deepening was producing about 200 bbls. The same company was cleaning out to deepen its No. 2 P. Stidham, SW cor. NE SW, same section, also. Its initial production was 152 bbls. from sand at 3,466-3,511 feet.

In the Stroud Field, The Texas Co. drilled too deep in its No. 1 Barber, NE cor. SE NE, Section 11-14-6, and went through the sand into water at 4,179 feet. The hole was being plugged back with lead wool, but after plugging 1 foot, the water had not decreased and was standing about 300 feet in the hole. The well was still making 170 bbls. of oil. The Amerada Petroleum Corp.'s No. 6 Lewis, NW cor. SW, Section 7-14-7, was flowing 430 bbls. while drililng at 4,136 feet in sand. The same company's No. 3 Lewis, on the southern correction strip, opposite Key West Townsite, was also drilling in sand at 4,110 feet ad flowing 510 bbls. The Roxana Petroleum Corp.'s No. 2 Hood, NW cor. SE NW, Section 7-14-7, had increased to 80 bbls. hourly at t otal depth of 4,167 feet. The same company's No. 1 Hood, SW cor. SE NW, same section, was drilling at 3,975 feet in slate.

In the Papoose Pool, an extension was effected by T. B. Slick's No. 1 Scott, SW cor. NW NE, Section 3-9-9, which was making 47,000,000 feet of gas from sand at 3,287-3,301 feet and was spraying some oil.

In the Gilcrease area, the Magnolia Petroleum Co.'s No. 1 Brown, C NE NE SE, Section 18-9-9, topped the sand at 3,108 feet, found first oil at 3,109 feet and at 3144 feet was estimated good for 200 bbls.

The Wilcox Oil & Gas Co.'s No. 1 Brown, SE cor. NW, Section 17-9-9, topped sand at 3,039 feet, passed through it into black shale at 3,048 feet and was on top of a sandy lime formation with a show of gas at 3066 feet.

An agitating campaign raised the output of the three deep sand wells in the Tonkawa Field several hundred barrels. The Comar Oil Co. agitated its No. 4-W Carmichael, NE cor. Section 3-24-1w, and it flowed 3,226 bbls. Sunday, 3,211 bbls. Monday and 3,193 bbls. Tuesday. The Pennok Oil Co.'s No. 7-A Endicott, NE cor. SW SE, Section 34-25-1w, was deepened 2 feet and increased about 600 bbls. to 2,822 bbls. daily. T. B. Slick also agitated his discovery well, No. 1-E Laura Endicott, and it made 2,490 bbls. afterward, and 2,515 bbls. Monday. The Comar Oil Co.'s No. 4 Koffenbrink, C SW NE SW, Section 36-25-1w, was shut down in water at 4,516 feet. The same company's No. 1 McCutcheon, C NW NW SW, Section 11-24-1w, was going ahead at 4,165 feet after a fishing job.

The Gypsy Oil Co. was said to have started a swabbing campaign to increase its production in the Tonkawa Field.

A wildcat in Pawnee County was reported to have 1,800 to 2,000 feet of oil in the hole. It was Donahoe & Stryker's No. 1 Zoldoskie, NW cor. SE, Section 22-23-4. The oil was coming from the Cleveland sand at 2,358 feet.

In Pawnee County, Ora Steens No. 2 Canfield, NE cor. NW SE, Section 17-20-7, was good for 35 bbls. after a shot of 100 quarts in sand at 2,642-77 feet. The Riverside Oil Co. abandoned its No. 1-A, SE cor. NW, Section 36-21-8, as dry at 3,075 feet.

In Noble County, just west of the Tonkawa producing area, the Ponca Oil & Gas Co. was spudding the second hole for its No. 1-A, NW cor. SW, Section 9-24-1w, after skidding the rig 40 feet south.

In western Pawnee County, the Magnolia Petroleum Co. was rigging up No. 1, SE cor. SW, Section 32-23-3e. The Marland Refining Co.'s No. 4 Miller, CSL SE NW, Section 33-23-3e, was shut down at 3,895 feet, swabbing and bailing about 60 bbls. of oil from sand at 3,887-95 feet. The Magnolia Petroleum Co.'s No. 2 Ely, NW cor. NE, Section 4-22-3e, skidded the rig 20 feet east, with old total depth at 1,160 feet. The same company's No. 2, SE cor. NW, Section 9-22-3e, had 2,500 feet of oil and some water in the hole from sand at 4,224-57 feet after a 40-quart shot.

In Payne County, Mulberry & Skelly Oil Co. had a rig in place for No. 2 Payne, SW cor. SE SW, Section 32-18-4. R. C. Jones was rigging up to deepen his old well, No. 1 Pormell, C SE SE, Section 31-18-4, with old total depth at 2,380 feet.

In Pontotoc County, the Dixie Oil Co. abandoned No. 2 Floyd, CSL SE SE NW, Section 28-3n-4e, as a failure at 1,005 feet. This is on acreage purchased early this year from Gilbert & Clark who discovered the freak asphalt well which pumped 200 bbls. for some time.

In Garvin County

In Garvin County, the Magnolia Petroleum Co.'s No. 5 R. Gibson, C SW NE SE, Section 10-1n-3w, made 40 bbls. from sand at 1,577-1,605 feet. The Texas & Pacific Coal & Oil Co.'s No. 1 Riddle, C SW SW NW, Section 35-1n-3w, was abandoned at 1,590 feet because of lost hole, and its No. 1-A, 50 feet east of the original well, was rigging up rotary.

In the Sholem Alechem district Wirt Franklin's No. 1 Morgan, C SE NW NW, Section 28-1s-3w, was dry and abandoned at 3,507 feet. The Humble Oil & Refining Co.'s No. 1 Dexter, C NE NW SE, same section, was making 405 bbls. from broken sands from 3,112 to 3,335 feet. Wirt Franklin's No. 1 Broughton, C NW SE NE, same section, was making 165 bbls. of oil and about 40 bbls. of water from sand at 3,392-3,415 feet, with total depth at 3,435 feet. The Tidal-Osage Oil Co. was rigging up rotary for No. 1 Parsons, C SE SW NE, same section. The Humble Oil & Refining Co. was drilling at 316 feet in No. 2 Lusk, C NW NW NE, Section 33-1s-3w, and the Magnolia Petroleum Co. was drilling below 100 feet in No. 1, C NW NW SW, Section 35-1s-3w.

Graham Area

In the Graham area, the Fox Petroleum Co. plugged No. 1 Williams, CSL SW NE NW, Section 23-2s-3w, as a failure at 2,690 feet and Hawks & Ware also considered No. 1 Williams, CSL SE NE NW, same section, as a duster at 2,628 feet. The Magnolia Petroleum Co.'s No. 2 E. Lahman, C SE SW NE, same section, was good for 600 bbls. from broken sands at 1,954-75 feet, and solid sand at 1,975-2025 feet. The same company's No. 1 C. D. Williams, C NW NW SE, same section, made 50 bbls. from broken sands at 2,027-2,200 feet after plugging back from 2,325 feet. The same company's No. 7 Tucker, C SW NW SE, Section 25-2s-3w, was a 50-bbl. well in sand at 2,718-39 feet when plugged back from 3,165 feet. The Skelly Oil Co.'s No. 2 Simpson, C NE NE NW, Section 25-2s-3w, was swabbing 75 bbls. from sand at 2,040-75 feet. The Southwestern Petroleum Co.'s No. 6 Wolfe, C SE NE SE, Section 25-2s-3w, was a 12,000,000-foot gasser in top of sand at 2,831-32 feet.

Max Westheimer had a 120-bbl. producer in his No. 6 Fowler, C SE NE SW, Section 31-2s-2w, from sand at 3,115-41 feet.

The Schermerhorn Oil Co.'s No. 3 Dickerson, C SE NE SW, Section 5-3s-2w, was making 118 bbls. from broken sands at 2,397-3,139 feet, with total depth at 3200 feet. The same company's No. 1 McGill, C NW NE SE, Section 8-3s-2w, swabbed 124 bbls. the first 24 hours from total depth of 2,535 feet, but soon quit flowing and was to be put on the pump.

The Cottonbelt Petroleum Co.'s No. 3 Rexroat, CWL NW NW NW, Section 15-4s-2w, an old well, was making 100 bbls. from broken sands at 2,244-2,300 feet. Total depth was 36 feet deeper. The Skelly Oil Co.'s No. 16 Dillard, C SE NE, Section 22-4s-2w, swabbed 150 bbls. from total depth of 2,370 feet.

Brock Pool

In the Brock Pool, south of Ardmore, the Iowa Oil & Refining Co.'s No. 3 Watkins, CEL SW SW SW, Section 17-5s-1e, made 20 bbls. from sand at 1,525-65 feet, total depth being 1,580 feet.

In Stephens County, Malernee and others were pumping 135 bbls. from No. 6 Britton, CSL NW SW, Section 20-1s-8w, from sand at 2,305-20 feet.

In Jefferson County, the Prairie Oil & Gas Co. was spudding No. 1 Seay, SW cor. NW SW, Section 34-6s-5w.

KANSAS

The J. A. Hull Co.'s No. 7, CWL NW SE, Section 24-32-4, Cowley County, the discovery well in the Bartlesville sand in the old Hull Pool, had 40 feet of cavings in the hole, completely burying the sand which was at 3,000-32½ feet, and was still flowing 265 bbls. daily.

Waite Phillips and the Marland Refining Co. brought in several good wells this week in Cowley County, Kansas, No. 3 Johnson SW corner NW, SE, Section 20-33-3e, started at 140 bbls an hour from sand at 3,215 feet, drilled in 12 feet. No. 3 Glasgow, NW corner NE, SW, Section 20-33-3e made 700 bbls the first 24 hours from sand at 3,199 to 3,229 feet. No. 2 Wortman, SE corner Section 20-33-3e got sand at 3,188 feet and at 27 feet in made 700 bbls in 24 hours. No. 3 Wortman, SW corner SE, NW, Section 20-33-3e, was good for 600 bbls the first 24 hours at 3,188 to 3,216 feet.

FUEL OILS FIRM DESPITE CRUDE CUTS

(Continued from Page 22)

in the Standard of Indiana tank wagon was not as large as was expected by many. No further general declines are expected unless crude prices are further reduced.

The higher gravity gasolines declined practically the same as U. S. Motor gasoline. The purchases were for small lots. No export business for any grade developed. No material improvement in the market is expected until the exporters do get into the market again, for it is apparent that there is too much gasoline being offered for the domestic trade to absorb. It is still generally believed that important export purchases will be made as soon as the buyers feel that the crude schedules are not to be lowered again.

Cosden & Co., which entered the spot market two weeks ago is still selling. The company temporarily withdrew for a couple of days last week, but on Monday was again offering U. S. Motor gasoline at 8½ cents direct to the trade and 56-58, 450 at 8 cents, with ¼ cent under these prices for resale. The company is moving some material at these prices, although they are slightly higher than the general market. Important changes are being made in the marketing policies of the company and it is generally believed that the company will continue in the open market over the balance of the summer.

There is little to add regarding fuel and gas oils outside the general situation previously outlined. Buyers were in the market endeavoring to purchase fuel oil under 75 cents, but were not successful and several refiners were selling at 80 cents and above. A few refiners are in the market for gas oil and larger outside buyers have been making inquiries. Buyers seem willing to pay 2⅝ cents, but are slow in accepting 2¾ cents and higher prices are asked by several refiners.

Natural Gasolines and Blends

There has been a falling off in demand for natural gasolines and all grades have slumped in price. This is largely a development of the lower straight-run prices. Refiners, in the face of a declining market, are not willing to pay the prices asked by the natural gasoline manufacturers. It is expected the demand will improve again as soon as prices recede to the point where refiners can use natural gasoline profitably. Blends prices during the past week have not declined as much as the straight-run market. A fair movement is also reported by the blenders. Prices are expected to decline so that the usual price relationship between blends and straight-run products is effective again.

A slight weakness of kerosene was apparent. General prices, however, are the same. Some sales of 41-43 water white under 4 cents were reported and a few buyers were able to shade prices on other grades. Offsetting this weakness were the statements of several refiners that they continued to have a steady demand. Inquiries are still numerous for distillates for fall and winter delivery. Contracts are being made, although there is still a large amount of business which has not been placed. The spot market is unchanged.

Neutrals and Wax.

The neutral market is very unsettled. At least two refiners in the Group have adopted the policy of meeting competition and are not making general changes in prices as was done by Cosden & Co. last week. These companies state that they find other refiners selling with little regard to price and they are protecting their customers when this type of competition appears. Bright stocks are fairly firm with demand steady.

The Standard Oil Co. of Louisiana, through the Carter Oil Co., made an important purchase of cylinder stocks during the past week from the Allied Refining Co. The purchase was for approximately 65 cars. The order was placed on a competitive bid in which several concerns were participants. No announcement was made as to the price, although it is generally believed to have been under the prevailing spot market. The Allied Co. is one of the largest manufacturers of high-grade cylinder stocks in Oklahoma and the removal of this stock is expected to materially aid the market, which has been experiencing a slump for several weeks.

The demand for wax has improved in Group 3, as it has in other sections of the country, and prices are slightly higher. No large purchases have been placed.

GULF COAST

(Continued from Page 107)

Aransas Pass and moved rig to another location for No. 4.

The C. & R. Oil Co.'s No. 3, west of Iola, Grimes County, is drilling at 465 feet.

In Harris County, the Texas Exploration Co.'s No. 17 Warren, on the north side of the Hockley Dome, is sidetracking at 2,677 feet and No. 19 Warren is drilling around 365 feet. The Dome Development & Petroleum Co.'s No. 1, west of Houston, on Buffalo Bayou, is fishing at 700 feet.

News Notes

HOUSTON, Tex., July 21.—Oil will probably pay out the defalcations of the cashier of a bank in one of the Pacific Coast States. The cashier put $135,000 in a company organized to operate in the Somerset Field, southwest of San Antonio. The oil company has six pumping wells on the lease and the bank has taken over the interest of its defaulting cashier. That official is in a penitentiary.

The Monongahela Tube Co. has established a southwest district sales office in the West Building, Houston, with Creig H. Geddis, assistant sales manager, in charge.

TWO GOOD PRODUCERS IN HULL AND HUMBLE

HOUSTON, Tex., July 22.—The Sun Oil Co.'s No. 19 River, Humble Pool, is flowing 2,000 bbls. at 3,100 feet. The Mecom Oil Co.'s No. 4, in Hull Pool, is flowing 1,200 bbls.

California Market Little Affected by Reductions in Crude

In reply to numerous inquiries as to what effect recent reductions in prices of Mid-Continent crude would have on the California situation. K. R. Kingsbury, president of the Standard Oil Co. (California), makes the following statement:

The recent reductions in prices offered for Mid-Continent and Gulf crudes will have very little if any effect on the California situation for the following reasons:

First: The present prices in California for crude and finished products are so low that these markets are not competitive with the Mid-Continent or Gulf fields.

Second: The relative prices for crude oil in California and the Mid-Continent and Gulf fields still afford sufficient margin for California to ship its surplus crude oil to the Atlantic Seaboard.

NORPHLET PIPE LINE TO DESTREHAN, LA.

EL DORADO, Ark., July 19.—Officials of the Crusader Oil Co., which recently purchased holdings of the Arkansas Pipe Line & Navigation Co., at a Federal receiver's sale in Texarkana, announced that the company would construct a pipe line for oil transportation from a point near Norphlet, in the north field, to Destrehan, La., touching the Mississippi River 90 miles above New Orleans, from which point the oil will be taken to its destination by water.

The line will have a capacity of 50,000 barrels daily or more than 18,000,000 barrels annually.

The route of the proposed line will be via Farmersville, Monroe and Baton Rouge and its total length will be 322 miles.

The Crusader Co. has established headquarters in El Dorado, with W. R. Davis, Tulsa, as president, who announces that when the line to the Mississippi River is completed a line also will be constructed from Oklahoma oil fields to connect with the line from El Dorado to the sea. L. D. Hibbs, of Tulsa, is general manager. The company is a subsidiary of the British-Mexican Petroleum Corp.

INVESTIGATE INDIANA COMPANY IN MISSOURI

JEFFERSON CITY, July 22.—The Supreme Court has appointed Dewitt C. Chastain, of Butler, Mo., commissioner to take testimony regarding the Standard Oil Co. of Indiana to enable the Attorney General to determine whether anti-trust proceedings against the corporation would be justified. The action begins an investigation and not a prosecution.

This is the first step by Attorney General Barrett in his war against discriminatory prices of gasoline, which he says prevail in Missouri. The action begins an investigation and not a prosecution.

The motion charges the Standard with discrimination in prices, allowing secret rebates for the purpose of destroying competition, and combining with other oil companies in maintaining the price of gasoline and restricting its sale.

Commissioner Chastain will hold the first hearing in the Attorney General's office here August 11, under the Supreme Court's order.

MAP COPYRIGHTED

The map of oil concessions in Venezuela published in The Oil and Gas Journal of July 3, from Michael O'Shaughnessy's "Venezuelan Oil Handbook" is copyrighted by International Surveyors, Inc., New York, under the title "Oil Map of Maracaibo Basin, Venezuela," showing holdings of various companies, shipping fields, oil pools, etc.

NEW PRESIDENT OF COSDEN & CO. CONSIDERING NEW DEVELOPMENTS

Jacob France, the new president of Cosden & Co., arrived in Tulsa Monday to make his headquarters here.

"I'm here feeling my way around for a while," he said when interviewed by a representative of The Oil and Gas Journal. "I want to get my feet on the ground before I start anything."

Mr. France recalled his many visits to the Mid-Continent during his association with J. S. Cosden, former president and founder of Cosden & Co. He remarked he had been coming to Tulsa from his home in Baltimore since 1913, and in these 11 years his present trip was the second he had made to the oil capital without Mr. Cosden.

Mr. France, who has been vice president and general counsel for Cosden & Co., was elected president of the company July 17 at the meeting of the board of directors, following the acceptance of the resignation of Mr. Cosden. It was announced Mr. Cosden was retiring to give his attention to his Venezuelan oil interests, operating through the Lago Petroleum Corp.

At the same time the directors elected a new executive committee composed of the following: Jacob France, president; Robert K. Cassatt, of Cassatt & Co.; Elmore B. Jeffrey, president Equitable Trust Co., Baltimore; F. R. Russell, vice president National Bank of Commerce, New York City, and C. I. Stralem, Hallgarten & Co.

Mr. France has been a member of the law firm of France, McLanahan & Rouzer of Baltmore for 21 years. Among

Jacob France

other corporate legal connections, he is general counsel and member of the executive committee of the Equitable Trust Co. of Baltimore and is director and general counsel of the Maryland-Virginia Land Bank. He is 42 years old.

Mr. France commented upon the excellent financial condition of Cosden & Co. and said he would spend some time inspecting the properties of the Cosden Oil & Gas Co., following his work in the Tulsa offices. It could be gathered from his statements that Mr. France wished to study his moves and then act quickly and decisively.

"There will be no change in the personnel of Cosden & Co. at present," he announced in response to a question concerning the possibility of changes as a result of the new management. "I am not prepared to say just now what changes in the policies of the company will be brought about," he continued. "That is a matter which will have to be worked out."

Mr. France recognizes the danger of overproduction of crude oil, asserting that the weak spots at present were the heavy stocks of crude and refined products carried in storage. He did not anticipate any great improvement in the industry before fall.

Accompanying Mr. France was L. A. Keidel, formerly vice president of the National Bank of Commerce, New York City, who was recently elected vice president of Cosden & Co. in charge of finances. He will be closely associated with Mr. France in the executive management.

Although no special comment was offered by Mr. France, it has been gathered that developments are under consideration within Cosden & Co. which will round out the company's organization with a view to placing all departments on a par with the producing and refining departments. Mr. France is said to see the need of an organization capable of caring for petroleum and its products from the well to the consumer.

NORTH TEXAS MARKET SOFT AND SLUGGISH

FORT WORTH, Tex., July 21.—The market for refined oil products in the North Texas district, has almost reached a demoralized condition. Buyers place no orders for future shipment, only spot orders, with the tank car number to accompany the sale. This condition is charged to a softening in the demand and the late cuts in crude.

In spite of this the refined market held to the previous week's quotations remarkably well. Gasoline of all grades is off only about one-fourth cent, fuel oil lost around 5 cents a barrel, kerosene is stationary and gas oils are one-eighth of a cent off. Manufacturers are decreasing their output, with talk of a shut down where contracts do not interfere. There is plenty of stock to fill all spot orders, excepting gas oil.

New Navy gasoline developed a sluggish market, buyers were scarce and spot sales alone were reported. Most of the sales were at 8 to 8¼ cents, with the refiners inclined to hold their stocks.

Ten cents flat was the quotation on 64-66, 375 end point gasoline. The price declined one-fourth cent. Inquiries were scarce, with no sales for future delivery and no domestic demand.

Natural gasoline which has maintained its prices better slipped a little, with quotations off at least one-fourth cent. Grade A is steady at 7¼ to 7½ cents a gallon, Grade B, 7 to 7¼, and Grade C, 6¾ to 7 cents.

Fuel oil also developed a bearish condition, 80 cents flat was the standard at the Wichita Falls refineries, sellers' cars. The off season has forced a sluggish demand in long distance shipments and domestic consumption, with the market showing no indications of speedy recovery.

Kerosene held its price, with a decided slump in sales and inquiries. Four cents a gallon for water white gas was the prevailing price. Gas oil maintained a fairly steady price, around 2¾ cents, several bids at five-eighths being refused. Only a few single tank car orders were recorded, that kind being the only ones refiners would attempt ot fill.

STRAY STRATA IN BRADFORD

BRADFORD, Pa., July 19.—A strata of oil sand practically unknown in the Bradford Field has been penetrated in a new well being drilled near Marshburg by L. E. Mallory and Robert Pringle, of this city. The new vein contains oil of high grade and occasions considerable comment among local oil men as to its prevalence in this section. The vein may be the famed Tiona sand, which is usually reached at a depth of 1,600 feet. The strata at the Marshburg well was reached at about 1,650 feet. The Tiona sand is universally known as superior grade, resulting from the richness of its paraffin contents.

Grant Hubley Dies From His Injuries In Street Accident

Grant Hubley, vice president and general manager of the Oil Well Supply Co., died in the Homeopathic Hospital, Pittsburgh, Pa., Sunday morning, from injuries received when struck by an automobile at the Wood Street and Third Avenue crossing, Pittsburgh, June 30.

Mr. Hubley was born in Allegheny City, Pa., March 27, 1865. After leaving the public schools he spent four years as bill clerk and bookkeeper in a mercantile establishment in Allegheny City and a similar period in his father's hardware store, entering the employ of the Oil Well Supply Co. as bookkeeper in 1889 and being transferred within the year to the Twenty-first Street Warehouse, Pittsburgh, of which works he was made manager in the following year, a position he held until 1919. He removed to the Water Street offices as Secretary of the company in that year, and from 1919 to 1922 was vice president in charge of production and from June to November of 1922 was vice president and general manager, his connection with the company embracing a service of 35 years.

Grant Hubley

Mr. Hubley was a man of upstanding character who was deservedly popular among a wide range of friends in the oil industry. Aside from his interests in the Oil Well Supply Co. he was vice president and a director of the Greensburg, Connellsville Coal & Coke Co. and a director of the National Union Fire Insurance Co. of Pittsburgh.

On October 22, 1891, Mr. Hubley married Miss Laura Jones, daughter of Thomas Jones, Jr., who survives him. He also leaves two daughters, Miss Agnes Jones Hubley at home, and Mrs. Helen Louise Holzworth of Middletown, Ohio; five sister, Mrs. Robert J. Bailey of Pittsburgh, Mrs. Charles A. James of New Haven, Conn., and Miss Frances A. Hubley, Miss Mary P. Hubley and Miss Loella Hubley of Atlantic City and two brothers, Samuel D. Hubley of Pittsburgh and Wilbur Hubley of Louisville.

VARYING PRICE NOT CRIME

TOPEKA, Kans., July 21.—The fact that gasoline is selling at varying prices throughout the State is not, in itself, evidence of violation of the antitrust law, said Attorney General C. B. Griffith, in a letter to Governor Davis. Uniformity of prices, he declared, might indicate the existence of a combination and a lack of competition. Kansas is now represented, Mr. Griffith declared, on an executive committee of nine States' Attorneys General, cooperating with the Federal Government in the oil suit.

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Maloney Tanks are made in sizes from 12 barrels up. 12 and 17 barrel Maloney Tanks are shown above.

Our small tanks are widely used for water storage at drilling wells, as gasoline drip tanks, and for other general purposes. They possess all of the advantages of MALONEY patented construction, will stand considerable abuse, and are easily hauled from one location to another.

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MALONEY TANKS

DRILLED 2,000 FEET BEFORE DRAKE'S TIME

(Continued from Page 109)

buffaloes are used to run the bucket chain. Long series of these pumping stations, with their inclined runways up which the animals are led to their work, run over many of the hills.

For low lifts small stations with a bucket chain run by treadmills in which two coolies working in shifts of one hour on and one off are used. This type of station handles about 1,500 bbls. a day.

To the average westerner perhaps one of the most remarkable things about the whole field is the manner in which the Chinese have adapted bamboo in various forms to their work. It is cut in strips and used as drilling line. In still thinner strips of the thickness of cloth it is twisted into strands and made into a strong, pliable rope which is used as bailing line to depths of over 3,000 feet. Sticks of large diameter are used as pipe line. Joints and girths in rigs, etc., are seldom nailed, but are bound together with bamboo rope tightened with wedges. One of our party wanted to bet that he could carry on his back every ounce of iron on a Chinese lease except the drilling tools.

During the past 20 years few changes have been made in the method of drilling, piping, refining or transportation. One improvement has been the introduction of steam hoisting engines which are used in bailing. This has caused the construction of higher rigs to enable lifting bailers of greater length and capacity and the introduction of steel bailing line. During the past five years, in the effort to increase the capacity of bailers, wells 7 and 8 inches in diameter have been drilled instead of the old-fashioned 4 or 5-inch holes. It has been found that the larger hole can be carried to 3,000 feet and beyond more cheaply than the smaller diameters formerly used. Aside from these changes no alteration has been made in rigs, materials, methods or customs. Production in all its branches is essentially what it was hundreds of years ago. Considering the cheapness of labor, distance and difficulties of transportation, disturbed political conditions and other factors, it is remarkable how few improvements can be recommended. Changes may be made in rig construction, methods of handling gas and transportation, but otherwise it seems probable that production at Tzu-Liu-Ching will remain for many years as it is today. However primitive many appliances at Tzu-Liu-Ching may appear to our eyes, they do fit any conditions that exist and they do produce results.

The drilling rig.

Note—The writer gratefully acknowledges aid, suggestions and photographs from J. J. McPolan and P. M. Thorpe, of Dallas, Tex., and in particular valuable notes on transportation by Mr. McPolan. Reproduced with permission from The Lamp.

KANSAS SEEKING LAW FOR PLUGGING WELLS

TOPEKA, Kans., July 19.—Legislation to compel oil companies to plug gas wells and conserve the supply will be asked during the coming session of the Kansas legislature. The action was indicated in statements by members of the public utilities commission as well as by M. B. Light, head of the Kansas State Bankers Association and a resident of Winfield, in the southern Kansas gas fields.

A law similar to the one now on the statute books of Oklahoma will probably be asked. Members of the Public Utilities Commission stated that they had no authority under the law to direct the handling of natural gas supplies. However, in the interest of fuel conservation, they will seek to secure passage of an act which would force producing companies to plug gas wells and prevent waste.

Mr. Light pointed out that a number of big wells in southern Kansas have been lost through careless waste of the gas supply. The operating companies were seeking oil and not gas. Consequently, there was no attempt to conserve the gas supply. This waste amounts to hundreds of millions of feet of gas a year, Light asserted.

FOREIGN SILICA GEL CORPORATION FORMED

Announcement of the formation of the Silicia Gel Foreign Petroleum Corp. has been made. Officers of the Davison Chemical Co. and the Royal Dutch organization will be among the directors of the new company. The foreign Silica Gel Co. will take over the refining of petroleum products in all parts of the world outside of the United States.

The directors of the new company include J. B. August, Kessler William, Carroll de Louw and Fred Godber, representing the Royal Dutch interests, and C. Wilbur Miller, Waldo Newcomer, Robert Garrett, Omar Hershey and Ernest C. Miller, representing the Silica Gel and Davison Chemical interests.

KERN COUNTY GASOLINE PLANTS

LOS ANGELES, Cal., July 19.—The Pacific Gasoline Co. has started building two additional natural gas gasoline manufacturing plants in Kern County, one near Taft and the other in the Elk Hills district. They will have a combined capacity for handling more than 10,000,000 feet of gas daily; that is to say, upward of 20,000 gallons of gasoline. The approximate cost of these new installations will be $300,000 and will give the company 11 plants in that county.

PRAIRIE ANNOUNCES NEW PLAN OF STORING OIL TO HELP PRODUCER

Coincident with the action of the Prairie Oil & Gas Co. last Thursday in placing in effect the three grade crude price schedule similar to that previously announced by the Sinclair Crude Oil Purchasing Co. the Prairie announced a storage program and a new policy in buying and storing crude which is designed to aid producers and to protect properties of producers from drainage.

Under the new arrangement, the Prairie will run all oil from properties connected to its lines and pay cash at once for half of it. It will store the other half to the credit of the producer and agrees to buy this oil from the producer within one year from the end of the month in which the oil is run at the then posted price of the Prairie. It will give producers receipts for the oil when run and monthly statements showing the amount of oil owned by the producer which is held by the Prairie and which the Prairie had agreed to buy within the year. Producers state these receipts will serve as security for bank loans. The Prairie will make a charge of 3 cents a barrel a month for storing the oil until it buys it but will assume all risk on the oil, the 3-cent charge being the only charge made against the producer, the Prairie not charging for shrinkage or any other loss. It is stated the new plan is not to be considered as an entire lifting of proration.

New Price Schedule

The new price schedule of the Prairie, which has been adopted by the Gypsy, Cosden, and Empire companies in addition to Sinclair, follows:

Below 30 degrees	$1.25
30 to 32.9 degrees	$1.45
33 degrees and above	$1.75

In a statement announcing the new policy, the Prairie said:

"In view of the fact that we have received a large number of requests from producers to increase our purchases in the field in order to protect their properties from drainage, even though we stored part of their oil for their account, and while we stated in our proration notice of June 30, 1924, the company prefers only to take such oil as it can currently market, the company has decided, in order to relieve and accommodate producers as much as possible, to adopt the following plan for the time being, notice of which is today being sent to all producers from whom we are purchasing oil. Under this plan the company will at once, in cases where relief is required, increase its takings from the field, but that this is not to be considered as an entire lifting of the proration.

"Notice is hereby given that from and after 7 o'clock a. m., July 17, 1924, and until further notice the Prairie Oil & Gas Co. will purchase crude oil in Oklahoma, Kansas and Texas under the following conditions:

"One-half of the oil run for its account will be paid for in cash on the regular cashing dates under the terms of the company's division order and at the Prairie Oil & Gas Co.'s posted market price in effect on the day the oil is run into the pipe line.

"The remaining one-half of the oil delivered by the producer to this company shall be held by the Prairie Oil & Gas Co. for the credit of the owner of said oil, subject to the following conditions.

Agreement to Buy and Sell

"The owner agrees to sell to the Prairie Oil & Gas Co. and the Prairie Oil & Gas Co. agrees to purchase and pay for the one-half of the oil covered by paragraph three hereof on any day it may elect within one year.

"Payment for oil received under paragraph three hereof will be made at the Prairie Oil & Gas Co.'s posted market price for oil of the same kind and gravity as that theretofore received from the producers tanks, in effect on the day it elects to purchase said oil, less the usual deductions under the terms of the company's division order.

"For all net oil received and held in storage under paragraph three hereof and until paid for, there will be a charge of 3 cents per barrel for each calendar month said oil is held in storage. This oil will be held at the risk of the Prairie Oil Gas Co. and there will be no other charge for expenses in connection with handling and storing said oil or for the insurance or taxes.

"It is understood that the one year's time hereby granted the Prairie Oil & Gas Co. to purchase the oil received under paragraph three hereof shall in each case be one year from the last day of the month in which said oil was received. In other words, the quantity of oil credited the producer and not currently paid for in any calendar month shall be considered under contract for one year from the end of that particular month, and the Prairie Oil & Gas Co. shall have the continuing right within that year, on any day it may elect, to purchase and pay for all or any part of the oil stored for that month.

"Monthly statement or receipt will be sent producers, showing the quantity of oil and gravity thereof run during the month and held under this agreement, and when the company elects to purchase all or any part of said oil, official notice thereof will be published in the "Independence Daily Reporter," Independence, Kans., at least 10 days before the payment will be made, giving the date of election and of payment, which payment shall be within 15 days after date of election.

"The Prairie Oil & Gas Co. will recognize no assignment, transfer, conveyance or pledge of any interest in or claim to the proceeds of said oil held in storage hereunder unless made upon the statement or receipt issued by the company and accepted by it prior to the date of payment for said oil.

"Current division orders filed with this company are temporarily modified to the extent that this agreement changes or modifies the terms thereof.

"This notice is sent you in duplicate. Please note your acknowledgement at the bottom of one copy and return by first mail to the Prairie Oil & Gas Co., Independence, Kans., retaining the other copy for your files."

ANGLO-PERSIAN OIL CO. INTO NAPLES MARKET

Another large petroleum concern is now said to be trying to establish itself in the Naples market. This company, the Anglo-Persian, is reported to have three oil tankers in the Mediterranean and to be contemplating additions to this fleet. It is also said to be looking for a site in Naples for the establishment of a depot with storage tanks.

Imports of petroleum products into Naples during April were somewhat above the average, due in a large measure to the increased number of oil-burning ships that took on oil at Naples. The inland demand seldom varies from month to month, but the shipping—especially the tourist traffic—is largely seasonal. Fuel oil has made up over half of the month's imports, 5,000 metric tons having entered. Gasoline imports were also large, 3,000 tons, but no kerosene and only 1,500 tons of lubricating oils imports were reported. Partly because of the increased imports and partly because of stronger competition prices declined considerably. Fuel oil at the end of the month was being quoted at $3.67 per barrel of 42 gallons. Gasoline was quoted at 30 cents per gallon in the free port and 46 cents per gallon gallon duty paid. Kerosene was quoted at 13 cents per gallon in the free port and 27 cents per gallon duty paid. Stocks on hand at the end of April amounted to 800 tons of kerosene, 1,900 tons of gasoline, and 2,400 tons of fuel oil.

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CALIFORNIA FIELDS

(Continued from Page 42)

Field was brought to a rather abrupt ending by the abandonment of No. 1 Judd by the Globe Petroleum Co. at 4,908 feet. No favorable indications of any kind were found in the course of the work. The General Petroleum Co. ran into a fishing job in No. 2 Dabney at 2,950 feet and with less than 400 feet to go for production the company is experiencing its first setback. The only completion recorded at Huntington during the week was the Standard's well No. 8 on lease "E," which was good for 80 bbls. a day. It is pumping 15.5 gravity oil from 2,359 feet. The company is still having trouble with well No. 21 on lease "A" and the best that could be secured was 50 bbls. of oil and 25 bbls. of water. This well was originally drilled to 4,339 feet but later plugged back to 3,955 feet. Well No. 25 on the same lease is showing oil and gas at 3,420 feet and indications point to a small but successful completion. No. 2 Geisler is also showing oil and gas and, although the hole is 4,350 feet, there is a fair chance of securing commercial production. No. 1-A Orange Title is still standing cemented following the showing picked up at 5,510 feet.

Miscellaneous Drilling

There were no new developments of particular interest in the Rideout Heights area of the old Whittier Field during the week. No. 2 Strong of the O'Donnell Refining Co. is still dry at 4,800 feet and the failure of this well to pick up the deep sand around 4,300 feet has resulted in a good deal of interest being manifested in several wells, particularly those of the Petroleum Midway Co. The latter company has 300 or 400 feet to go in three of its four wells before anything can be expected. When they approach the 4,100-foot mark they will be watched very closely. In the Fullerton district the Union Oil Co. made a casing test of the 6¼-inch cemented in No. 55 Graham & Loftus at 4,650 feet. The cement was drilled out and the water test now in progress looks favorable for a satisfactory shut off.

In the Anaheim district, the Standard Oil Co. has reached a depth of 5,490 feet in No. 1 Wagner with no showings of any importance being noted. The Shell Oil Co. is sidetracking a drill collar in its Bell test, No. 1 Loomis, at 3,900 feet.

In the Bandini area, the Oakridge Oil Co., after spending a good deal of time and effort, seems to have three dry holes. No. 1 Gage is drilling ahead at 4,880 feet, while No. 1 Kramer is making hole at 4,900 feet. No. 1 Rossi, the company's third well, has been recemented for the tenth time and, unless something is picked up shortly in either No. 1 Gage or No. 1 Kramer, there is very little hope for production. In the vicinity of Culver City the Associated Oil Co. has reached a depth of 4,425 feet in No. 1 Caserini, the old 57 Petroleum Co.'s well. The Pan American Petroleum is drilling slowly ahead and taking frequent cores in No. 1 Pacific Southwest near El Segundo but so far nothing of importance has been discovered. At 4,275 feet the formation is a hard gray sand. The Shell Oil Co. has started actual work on the old Fortuna well near by and is drilling in a sandy shale at 4,600 feet.

The Standard Oil Co. is still doing more or less work on its six Inglewood tests but, with the exception of the showing found in No. 1-A Los Angeles Investment several months ago, no additional developments of interest have taken place. The Associated Oil Co. had a slight gas showing in its No. 1 McNally at La Miranda about 2 miles east of Santa Fe Springs and, while it was only a surface showing at 1,485 feet, it gave a little encouragement. Several operators are diligently working in the Newport area but so far no crude production has been secured. The Fulkerson interests are pumping a little heavy oil from the tar sand at 1,035 feet by the use of a heating apparatus. The Petroleum Midway Co. seems to have a duster in its Norwalk test, No. 1 Carmenita, and the formation is a sandy shale at 5,280 feet. The Keck Syndicate's No. 6 has abandoned its Palos Verdes test as a duster, and, although slight oil and gas showings were noted, the well was not commercially productive.

Dominguez

The most important development in the Dominguez Field during the past week was the completion by the Union Oil Co. of No. 4 Hellman, which added 1,825 bbls. to the company's daily production. No. 4 Hellman was brought in from 4,172 feet. The oil, which is clean and tests 32.4 degrees, is flowing through a 1¼-inch bean under a pressure of 450 pounds. The completion of this new well gives the field a total of 10 producers, 6 standing to the credit of the Union Oil Co., 3 to the credit of the Shell Oil Co. and 1 to the General Petroleum Co. The Union has 3 producers on the Callender lease, 1 on the Carson and 2 on the Hellman, while the Shell's producers are all located on the Reyes lease. The General Petroleum's lone well is a small pumper located on the Gardena lease in the northern part of the field. Both the Union and Shell are expected to finish new wells at any time. The Shell's No. 1 Childs in the extreme eastern part of the field flowed a little mud and oil from 3,950 feet, but the company drilled ahead and is at present down 4,092 feet, with favorable indications for a producer. The Superior Oil Co.'s test, No. 1 Carpenter, two locations east of the Shell Oil Co.'s No. 1 Childs, is drilling ahead in a sandy brown shale at 3,800 feet. If the Superior is to secure commercial production, the sand should be picked up within the next 200 feet. Southeast of No. 1 Childs, the Associated Oil Co. has spudded in No. 1 De Francis and is progressing satisfactorily.

With the exception of the completion of No. 4 Hellman, the most important development in this field was the establishment of a record for deep drilling in California. The Union's No. 1 Gardena, drilled with rotary equipment, has reached a depth of 7,307 feet, which is only a few hundred feet less than the deepest hole in the world. No. 1 Gardena, however, has 4,257 feet of open hole, which probably establishes a record for rotary drilling. The General Petroleum is apparently also striving for a depth record, as its No. 1 White is drilling ahead in a sticky shale at 6,130 feet.

Rosecrans

In the Rosecrans area, several wells are nearing the sand found in the Union Oil Co.'s No. 1 Rosecrans and, while one or two of them have actually had showings, no production tests have been made as yet. The Associated Oil Co.'s two wells, No. 1 Brockley at 3,453 feet and No. 1 Higgins at 5,512 feet, are held up with fishing jobs, although it is believed the fish in the latter will be recovered within a day or two. The Barnsdall Oil Co., drilling between the Union's producing well, No. 1 Athens, and No. 1 Rosecrans, still incomplete, has reached a depth of 3,537 feet. The General Petroleum is drilling ahead in No. 1 Amestoy and No. 1 Vaughn, but neither is deep enough to bear watching. North of the field's lone producer, the Union's No. 1 Athens, the Julian Petroleum Co. is drilling two wells and, while they will be excellent tests in the future, they are not yet deep enough to prove interesting. Morrison's No. 1 Swesey at 4,347 feet and the Superior Oil Co.'s No. 1 Maxwell at 4,252 feet are the center of interest. Morrison, who is the farthest away from production, has not yet picked up the pay but the Superior's No. 1 Maxwell, offsetting the Union's No. 1 Rosecrans, encountered the same showing which the Union found. The Superior's first showing was at 4,145 feet, but, after two unsuccessful attempts to secure a water shut off, the well was carried down in search of a formation which would permit the successful landing of a string. The formation at the present depth, however, 4,252 feet, is still loose and the hole will be carried down and cored frequently. The Standard Oil Co.'s No. 1 Cowan, a few weeks from now should prove an interesting well, since it appears at present to be a rank wildcat. It will be one of two things, define the eastern limits of the field as a duster or prove up and extend the proven area, if there is any such proven area at present with only one producing well. The Union Oil Co. is firmly convinced that a structure exists and extends between No. 1 Athens and No. 1 Rosecrans, a mile or so to the south. So sure is the company of its position that 10 holes are being put down simultaneously and preparations are being made to start two more. The Union has one of the best geological and field staffs in California and the company's operations prove their confidence in the district. During the past week the company increased its holdings by acquiring an 82-acre lease from Carl Rosecrans, paying, it is reported, a cash bonus of $200,000 and guaranteeing a one-sixth royalty. The Union is rigging cable tools to go in and pull the 4¼-inch and 6¼-inch strings in No. 1 Rosecrans with a view of deepening the well. Three strings of pipe have already been set in an effort to secure a water shut off, but so far all efforts have proved futile.

San Joaquin Valley

Development work in all the San Joaquin Valley fields showed a good increase during the past month, with the possible exception of Lost Hills, Belridge and McKittrick, where things are more or less at a standstill. In the Coalinga Field three wells were finished with a total initial output of approximately 250 bbls. The Amity Oil Co. finished well No. 9 on Section 1-20-14, good for 50 bbls. a day of 15.2 gravity oil from 575 feet. The Coalinga Empire finished two wells on Section 6-21-15 with an aggregate initial output of 200 bbls. No. 6 was good for 60 bbls. of 14.2 gravity oil from 2,660 feet, while No. 7 made 140 bbls. of the same gravity oil from 2,565 feet. The Netherlands Oil Co. started a new well, No. 6, on Section 26-20-14, while the Salvia spudded in No. 10 on Section 14-20-14. The Premier Oil Co. on Section 24-20-14 also started some new development work by spudding in well No. 25. Kern River showed only a small change in the amount of drilling being done. S. J. Tryon finished his well No. 3 on Section 2-29-28 and, while only a 10-bbl. pumper was secured, it was commercially profitable as only 485 feet of hole was required. Upon the completion of this well, the crew was transferred to No. 4 and actual work was started in record time. The Kern River Oilfields, Ltd., also finished a 10-bbl. pumper when No. 1-B on Section 33-28-28 was finished at 1,095 feet. Aladdin & Campbell finished well No. 4 on Section 9-29-28 and, when put on the beam, it pumped 12 bbls. of 13.1 gravity oil from 985 feet. On the Kern River Bluffs, the Pan American spudded in its well No. 1 on Section 13-29-28 and, although over 100 feet of tar sand was drilled through, the company is going ahead for a deep test.

Midway, the largest individual field in the San Joaquin Valley, leads in the amount of new development work and is also credited with the largest number of completions in this part of the State. During the month of June, the daily average production in this field will be in excess of 92,000 bbls. There were 13 new wells put on production with an aggregate initial output of approximately 8,600 bbls., the Pacific Oil Co. accounting for more than half of the number finished. The Pacific's best well was No. 21 on Section 33-31-24, which came in flowing 950 bbls. of 27.2 gravity oil from 4,140 feet. This is the Pacific's first producer on this section and the success attained resulted in the spudding in of Nos. 20 and 22. On Section 3-32-24 the company finished an 800-bbl. producer, No. 2, after drilling it to 3,686 feet. The Pacific also had a good run of luck on Section 1-32-23 and finished No. 83 as a 550-bbl. flowing well. The oil, which tests 27.1 degrees, is coming from 3,025 feet. No. 97 on the same property looks unusually good for an early completion. Three additional rigs represent the company's faith in the future of this lease, which already has over 50 producers. Three somewhat smaller wells, Nos. 25, 67 and 68, were finished on Section 31-31-24. No. 25 was good for 200 bbls. of 27.1 gravity oil from 3,440 feet. No. 67, drilled to 3,605 feet, made 50 bbls. of the same quality oil, while No. 68 is listed as a 150-bbl. producer from 3,373 feet. Six rigs and three additional drillers sum up the company's operations on this section. No. 52 on Section 15-32-24 was good for 140 bbls. of 25.2 gravity oil from 3,325 feet. No. 51 and 85 on the same section are expected to be completed within the next two or three weeks. The Pacific Oil Co. is the largest individual operator at Midway, both from a development and production standpoint. The company has over 250 producing wells and is running over 15 strings of tools. The best producer finished in the district during the past few weeks was the North American's well No. 7 on Section 30-31-24, a Government lease. It came in flowing 1,850 bbls. of clean 27.1 gravity oil from 3,395 feet. No. 8 on the same property looks like an early completion good for at least 1,000 bbls. daily. The California Petroleum also finished an unusually good well when No. 7 on Section 24-31-23 was brought in. The initial production, 850 bbls. of clean 27.1 gravity oil, is coming from 3,655 feet. The Honolulu Oil Co., one of the most successful operators in the field, finished a 1,500-bbl. flowing well when No. 62 was turned loose from 3,685 feet. The company is at present running five or six strings of tools but its holdings would permit of more intensive development if conditions warranted it. The Balboa Oil Co. added 1,000 bbls. a day to its production by finishing well No. 19 on Section 24-31-23 after drilling it to 3,500 feet. This is the company's best producer and it will more than double the outcome of the company during the previous month. The Victor Oil Co. only secured a 150-bbl. pumper of 16.8 gravity oil from 1,960 feet but, because of the shallow depth at which production was secured, it will prove far more profitable than many of the smaller deep wells being drilled in Southern California fields. The Midway Field is remarkable because of the long life of its producing wells. The Combined Oil Co. on Section 14-31-22 finished well No. 34 in record time and secured a 15-bbl. pumper of 13.4 gravity oil. This hole was also a shallow one.

Maricopa District

In the Maricopa district, which adjoins the Midway Field, nine new wells were put on production. The General Petroleum headed the list with three new producers, No. 106-A on Section 19-11-23, No. 171 on Section 34-12-24 and No. 7 Alpine on Section 36-32-22. The latter well, a 100-bbl. pumper, was drilled to 1,055 feet, while No. 171, a 95-bbl. well, was finished at 880 feet. No. 106-A, the smallest of the company's trio of new wells, was good for 5 bbls. from 605 feet. The Associated Oil Co. also finished three new completions but their combined production was less than one-half of that secured by the General Petroleum. On Section 17-11-23 the company finished No. 2 at 745 feet and No. 22 at 1,020 feet, both good for 15 bbls. a day of 12.6 gravity oil. The company's No. 61 on Section 18-11-23 pumped 60 bbls. of 14.4 gravity oil from 950 feet. The B. B. & O. Oil Co. lost little time in starting new work following the completion of well No. 26 on Section 23-12-24 and spudded in No. 30. The company's latest acquisition was good for 75 bbls. of 14 gravity oil from 1,020 feet. The Berry Holding Co., following the completion of its well No. 31

two weeks ago on Section 34-12-24, spudded in No. 24 and erected a new rig for No. 29. No. 31 was good for 85 bbls. of 14.2 gravity oil from 855 feet. Berry & Ewing completed No. 6 on Section 31-32-24 and secured a 75-bbl. pumper of 14.3 gravity oil from 1,055 feet. There were several new holes started in the Maricopa district and the daily average production during June of approximately 17,000 bbls. should continue to increase. In the Wheeler Ridge district there were no unusual developments during the past month except the completion by the Standard Oil Co. of its deep zone well at 4,001 feet good for 450 bbls. The company spudded in a new test, No. 12, and it is understood that it, together with Nos. 3 and 11 now drilling, will be carried to the deep sand. There were no new wells started in the McKittrick area and, with the exception of one completion by the Jewett Oil Co., conditions were unchanged. The Jewett's new well, No. 16, on Section 13-30-21 was good for 30 bbls. of 14.6 gravity oil from 928 feet. In the Elk Hills Field there were seven new wells put on production, three standing to the credit of the Pan American, two to the Pacific and two to the Belridge Oil Co. The latter company's two new producers were Nos. 11 and 13. The former was good for 1,000 bbls. from 2,940 feet, while the latter made 250 bbls. from 2,970 feet. The Pacific Oil Co. completed No. 22 on Section 27-30-24 as a 200-bbl. well from 3,315 feet, while No. 74 on Section 35-30-24 was good for 150 bbls. from 2,990 feet. On Section 6-31-25 the Pan American brought in No. 13 as a 120-bbl. well from 3,390 feet. Nos. 8 and 12 on Section 2-31-24 were good for 100 bbls. each, the former being drilled to 2,998 feet and the latter to 2,910 feet.

NATURAL GASOLINES FIRM IN CALIFORNIA

LOS ANGELES, Cal., July 21.—The outstanding feature of the past week has been the strong market for natural gasoline in California. Ever since early spring this commodity has been slumping week after week. When the summer came on and service station sales were coming into large volumes, the natural gasoline market still remained weak until finally many gasoline manufacturers had just about come to the conclusion that there was not going to be any demand for their product throughout the summer. Within the past four or five days, however, two of the large marketing companies stepped out and bought up practically all the spot natural gasoline available. The result of this clean-up has been an advance of ½ cent to 1 cent per gallon in natural gasoline of the various specifications available. At present it is difficult to get good water white absorption gasoline at 10½ cents a gallon on a spot purchase, although it is possible to contract at this figure provided the contract extends through the winter months.

Another price change of the past week which it is worth noting is the fractional stiffening of engine distillate. A 445 end point distillate with an A. P. I. gravity of 43 to 45 now commands between 8½ cents and 9 cents per gallon in quantity. The spread of ½ cent is due to several factors, the most important of which is the stability of the product; that is, whether it is made from a stable crude or is properly treated so that it will maintain its color for intercoastal shipment. Very little engine distillate is being used on the Pacific Coast at present, but there seems to be considerable demand for it along the Atlantic Seaboard. One advantage of shipping this commodity through the canal is that it is essentially a heavy gasoline and consequently suffers relatively low evaporation loss. The light end can thus be supplied in the Eastern marketing centers in order to produce a good service station gasoline meeting New Navy specifications.

Large quantities of gasoline are scheduled to leave California in the export trade during the coming 30 to 40 days. However, much of this business will not be profitable for the California marketing companies supplying it. It is simply a case of swapping dollars to reduce inventories, or rather to keep them from increasing to unreasonable proportions. No special significance is to be attached to this increased movement of gasoline, as it is a purely temporary condition, and does not represent either a disposition on the part of the Pacific Coast companies to unload in the Atlantic and Gulf Coast markets at a loss, nor does it indicate an overwhelming surplus of gasoline in California which has to be moved at all hazards. What it does indicate is that the California companies have begun to see the end of the period of increasing stocks and therefore they do not feel inclined to build steel storage for the purpose of storing gasoline over a very short peak of perhaps only a few months duration.

There is some indication of an increasing demand for cased kerosene for Oriental consumption. A number of the smaller refiners are again getting into this business. A slight increase in bulk kerosene shipments is also noticeable.

Fuel oil is in demand at $1.40, and lubricating oils are holding their own at established prices.

COASTAL MARKET HIT BY HEAVY OILS CUT

HOUSTON, Tex., July 20.—Refined products again slumped during the week ending July 19, caused by two 25-cent cuts in the posted price of coastal heavy oils. Coastal crude has maintained a steady price of $2 through the cuts experienced in the East and in the Mid-Continent and refined quotations fluctuated according to volume of orders and inquiries. But when costal heavy oils were cut 50 cents the refined market structure broke along with it and dropped as low as ½ cent.

Refiners say there has been a slackening on inquiries but more so on orders. They feel that this is due to jobbers awaiting a break in the crude market and wanting to avail themselves of the lower prices bound to follow. On the whole, however, both domestic inquiries and orders are holding well up if not a little better than at the same time last year and this condition begets a little optimism.

CANADIAN FIELDS

(Continued from Page 94)

Regent Oil & Gas Co. financed by British capital has resumed work on its deep test on Section 19-34-4w-4. This test is already reported down 3,300 feet without commercial production.

Northern Alberta

In northern Alberta, Prairie Oils, Ltd., is down over 1,500 feet with its test at High Prairie, but is held up for casing. McMurray Asphaltum & Oil, Ltd., which is developing a tar sand concession near McMurray, in the Athabaska district, is contracting to use the mined tar sand for the construction of sidewalks in various Alberta municipalities. Near Fort McMurray, drilling equipment from the Von Hammerstein oil claims has been moved downstream for two tests for salt.

In southern Alberta fire recently destroyed the derrick and boiler house of the Medicine Hat Petroleum Co. on Section 14-11-6w-4, near Bull's Head, with $8,000 loss. The test was down 350 feet with 20-inch casing. The company is planning to rig up again and complete the well.

In the Ontario fields, surface showings of oil are reported to have been found on the William Baker farm at Albion, near Brampton, in Peel County, and commercial development may be undertaken. In Kent County, Union Natural Gas Co.'s No. 251, John Shanks farm, close to Port Alma, is drilling. Eugene Coste's No. 7, Matt Boyle farm, Dover East, has spudded in for a deep test. Southern Ontario Gas Co. is reported drilling on its deep test in the southern part of Colchester South Township, Essex County.

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TREATMENT OF WATER FOR REFINERY USE

(Continued from Page 84)

the attendant evils of priming and foaming, which are traceable to the lack of water treatment. Presence of sodium and potassium salts in the water causes foaming and priming, one remedy for which is more frequent blowing down. Priming, or that condition when liquid water is carried over with steam, may be due to other reasons in addition to the presence of chemicals in the water.

The question of the proper treatment for boiler feed water is one which each refiner will be compelled to settle to his own satisfaction. It is a reasonable assumption that most of the water available for Mid-Continent refineries should be given some kind of treatment to remove hardness before it is introduced into the boilers. The question of the proper method to be employed in removing hardness is one which can be settled only by engineers after a careful examination of the water and the plans of the proposed plant.

Differ on Treatment

Most water experts advise a treatment of the water before it is introduced to the boiler. A number of men favor boiler compounds, however, and report excellent results from their use. As intimated above, however, much of the success of any method of treatment, depends upon the operators and the characteristics of the water to be utilized. It may be said that many of the preparations now sold, if used intelligently, would give satisfaction. In other cases, a combination of various preparations would represent the proper material to use. Boiler compounds should not be used as cure-alls for every water trouble, however, and only upon intelligent recommendation and preparation should they be placed in the boilers.

Among the methods for softening water before introduction into the boiler is the zeolite method. A zeolite is the name of a mineral which is a hydrated silicate of aluminum, combined with an alkali or an alkaline metal or both. Zeolites are found in nature and their property of exchanging their bases for another base has led to their employment in the field of water softening. So by use of zeolites, the calcium and magnesium bases of the salts, which cause water hardness, are given the sodium base of the zeolites, in the work of making the water soft. Natural zeolites on the market have intensified exchange properties, while artificial zeolites are prepared synthetically.

Some users have obtained satisfaction from the use of Permutit, an artificial double silicate of alumina and soda. The water to be treated is filtered through the Permutit and the sodium base is exchanged for the calcium or magnesium bases with the water emerging for use in a softened condition.

Softening Solutions

Under some conditions the addition of lime is sufficient to soften water satisfactorily, or in numerous other cases, lime and soda ash are found sufficient for all needs. Through this method the magnesium carbonate and calcium carbonate are precipitated and filtered off, leaving the water soft.

Various manufacturers are putting on the market various types of water treating appliances involving variations of the principles enumerated above. Among them are the continuous and batch softeners using the lime-soda ash treatment where no attempt is made to heat the water during the treatment. A very popular method involves a thermal action as well as a chemical reaction in the treatment of the water to remove hardness. By this method all suspended matter is removed, gases are thrown off and the action of the chemicals utilized is hastened. It is also asserted that the hot process produces a heavier precipitate and a quicker settling of the particles thrown out during the operation. The process may be used in continuous operations as well as the cold process.

As an example in the benefits to be derived from scientific water treatment, one refiner, operating four 150-horsepower tubular boilers and one 200-horsepower tubular boiler to generate steam for use in the stills and for running pumps and small engines has changed from the raw water to a hot process continuous treating system for his boiler feed water.

A 5,000-gallon softener was installed, which eliminated the scale and indicated a saving of $4,878, in one year. The apparatus as installed cost the refiner only $5,000. The saving in fuel alone was at the rate of $4,350 per year, and the saving in labor for inspection and cleaning ing of the boiler accounts for the remainder. The total cost of operation of the softener is given as $7.57 per day. The temporary hardness is removed by lime and the permanent hardness by soda ash. Exhaust steam is used for heating.

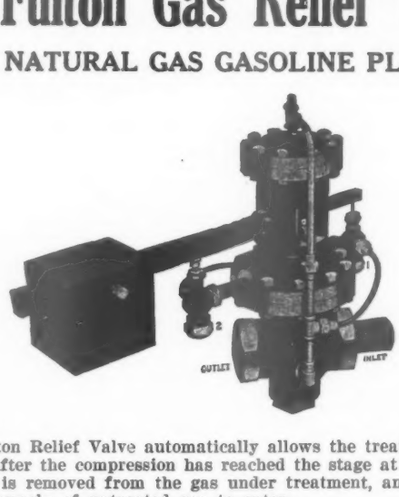
An increasingly large number of water softening plants are being installed by Mid-Continent refiners and present indications point to a more serious consideration of water problems in the future than has been common practice in the past. As has been pointed out in The Oil and Gas Journal, the typical refinery of today is not the small skimming plant but is the more or less complete refinery with its cracking unit. The modern refinery also makes an attempt to soften its water as another measure of economical operation.

SUMMER INDUSTRIAL RATES

OKLAHOMA CITY, Okla., July 19.—Summer industrial gas service rates have been granted by the Corporation Commission to the Nowata County Gas Co., serving Nowata and Delaware, the Consumers Gas Co. of Miami and the Dewey Gas Co. of Dewey. The rates apply from May 25 to October 15 and are chiefly applicable to gas used in boilers. The rate is 35 cents for the first 500 feet and 20 cents for each 100 feet over that minimum.

The Fulton Gas Relief Valve

FOR NATURAL GAS GASOLINE PLANTS



The Fulton Relief Valve automatically allows the treated gas to escape, after the compression has reached the stage at which all gasoline is removed from the gas under treatment, and permits a fresh supply of untreated gas to enter.

The weights on the lever can be accurately adjusted to operate at the desired point of compression. When this point is reached the valve blows until the pressure falls to 20 or 25 pounds, or until the treated gas has escaped.

By regulating the tappet screw on the lever which touches the stem of the exhaust pilot valve, the period of blowing can be shortened or lengthened as may be desired.

WRITE for list of installations in your vicinity. See this Relief Valve in operation. Talk with the operators. Make your own investigations. Send for complete catalog.

The Chaplin-Fulton Mfg. Co.

Organized 1884—Oldest builders of gas regulators in the country. Built in all sizes, from 1 inch to 24 inches; for all service, 1 oz. up to 1,600 lbs. pressure to square inch.

28-34 Penn Avenue **Pittsburgh, Pa.**

47

EDWARD VALVES

DESIGNED ESPECIALLY FOR OIL REFINERY CONDITIONS

FORGED STEEL	CAST STEEL
Sizes ¼" to 2"	Sizes 1¼" to 8"
500 lbs. pressure	300-500 lbs. pressure
1100° F. temperature	700-750° F. temperature

THE EDWARD VALVE & MFG. CO.

East Chicago, Indiana

INDUSTRIAL IMPORT OF CRACKING OILS

(Continued from Page 20)

1865 is freely conceded by everyone who is familiar with the development of the refining industry.

Disregarding all chemical theories of cracking which, to say the least, were largely empirical in 1865, and disregarding the physical equipment for cracking which must have been very rudimentary at that time, the fact remains that until 1913, when Doctor Burton received his first patent, cracking was a "lost art"—an idea that had never been worked out from a chemical standpoint—that had never been developed from an apparatus standpoint—that had never been utilized from an industrial standpoint.

In 1923 about 40,000,000 bbls., or 1,680,000,000 gallons of gasoline were made by cracking processes. Obviously the great bulk of this was made in Standard Oil refineries—and by the Burton process. The Standard of New Jersey has a larger refining capacity than the Standard of Indiana, owners of the Burton patents.

Tube and Tank Process

If the Standard of New Jersey had believed that the Burton patents were not valid they naturally would have refused to pay royalties for their use. In order to handle wax distillate the Standard of New Jersey worked out the Chamberlain process to be used in connection with the Burton process—and in order to be entirely free from paying royalties to the Standard of Indiana the Standard of New Jersey has developed the "Tube and Tank" process which is supposed to be non-infringing.

The Standard of California installed Burton cracking stills in its great refinery at Point Richmond, one of the largest in the world—and in order to be free from royalty payment has done a great deal of research and experimental work with the specific purpose of developing its own cracking process.

And instead of leading the public to believe that there are no valid basic patents on cracking processes, and that "huge profits" from licenses are being piled up, and that there is both a possibility and a probability that cracking processes will shortly be thrown wide open to everybody, with a consequent and substantial decline in the price of gasoline, it would seem that a more constructive policy would be to tell the millions of car owners how much less they pay for every gallon of gasoline that they buy, because of the millions of dollars that have been spent developing cracking processes—and the mililons more that will be spent.

Enhanced Mexican Oil

In 1922 the Panuco fields in Mexico produced 50,000,000 bbls. of heavy oil, practically all of which was burned as fuel oil by locomotives, steamships and industrial plants. Cracking processes have been developed to the point that today a minimum of 35 per cent of New Navy specification gasoline can be made from Panuco crude.

This means that today we could take this 50,000,000 bbls. that was burned as fuel oil and produce over 700,000,000 gallons of New Navy gasoline from it, and still have 30,000,000 bbls. of fuel oil left out of what went through the cracking stills.

Smackover is today producing about 100,000 bbls. of heavy oil a day, or at the rate of 35,000,000 bbls. a year. Cracking processes will convert 35 per cent of Smackover crude into New Navy gasoline.

After fractionating off, by straight run distillation, all of the gasoline in the average Mid-Continent crude a cut of 20 per cent of gas oil can be made—and at least 50 per cent of this gas oil can be turned into New Navy gasoline.

Mid-Continent crude contains an average of probably 50 per cent fuel oil—and at least 35 per cent of it can be cracked out as gasoline.

Pipe stills and cracking stills have been correlated until today there is practically no crude that can not be broken down and forced to yield substantial amounts of gasoline.

If, by straight run distillation, the average crude that went through the stills in 1923 produced about 22 per cent gasoline, and if the refiner can recover 50 per cent of a 20 per cent cut of gas oil—and 35 per cent of the 50 per cent of fuel oil that the average crude oil contains, then it is merely a question of the time when the refineries of the United States are equipped with sufficient capacity to handle their gas oil and fuel oil, as to where we will be getting an average recovery of about 50 per cent of gasoline from our crude oil.

Refiner the Conservationist

Automobile engines have been designed and built that will give more than twice as many miles as we are getting today from a gallon of gasoline. But we would have to scrap $3,000,000,000 worth of engines now in our cars and trucks if we were to make an immediate change.

In the final analysis the answer to the much-debated question of the early exhaustion of our oil fields does not rest with the producer of crude oil. Essentially, he is not a conservationist. His hope of financial success lies in producing two barrels of oil where he produced one barrel before—and this is seldom true conservation. The refiner is the true conservationist, for his hope of success lies in producing more dollars worth of refined products from the one barrel.

And so the prolonging of the life of our oil fields, regardless of how many billions of barrels they produce in the future will rest largely in the hands of our refiners and our engine manufacturers.

A new and better type engine is ready—the cracking and blending plants are already here. It is simply a question of how rapidly their use will be extended.

If, in 1923, the refineries that run 600,000,000 bbls. of oil and produced 7,555,000,000 gallons of gasoline had each been equipped with cracking units suitable for cracking kerosene, gas oil and fuel oil, it is altogether probable that we could have produced the same amount of gasoline by running 400,000,000 bbls. of crude oil—or less.

Avoided High Gasoline

In the last 10 years our escape from high priced gasoline has been due partially to the producers of crude oil who supplied three times as much oil in 1923 as in 1913. But the real factor in holding down the price of gasoline has been the refiners who produced six times as much gasoline from three times as much crude.

And in accomplishing this result the biggest single factor has been the use of cracking plants—and in the future cracking will be an increasingly important factor as the most direct and immediate means of holding down the price of gasoline.

Measured in terms of what it saved ing saved the refining of 150,000,000 bbls. of crude oil in 1923.

Measured in terms of what is saved the car and truck owners in the prices that they must have paid for gasoline, if no cracking processes had been in use cracking saved the motorists last year probably $500,000,000.

And this is the significance of cracking—a significance that can be measured in dollars saved to the refining industry—and in many more dollars saved to the millions who call at the filling station for gasoline, in whose manuacture the cracking royalty charge could not possibly amount to 2 per cent of the filling station price.

MANGUM GAS FRANCHISE

OKLAHOMA CITY, Okla., July 19.—The city commission at Mangum has called an election to be held on August 12 to submit to the voters the granting of a franchise to the Western Power & Gas Co. of Oklahoma City which proposes to install a gas system to be supplied with natural gas from the Sayre Field. The franchise would run for 21 years and would provide for domestic gas at the rate of 65 cents per 1,000 feet.

Try This Remarkable Improvement in Your Own Work

See Its Advantages at First Hand; Examine Its Unique Design—*Money Back if Not Satisfactory*

If the Roark Standing Valve **does** do all that is claimed for it; if it **does** reduce cut oil and B. S., increase capacity and eliminate leather rings—then certainly every progressive operator will want to get in on its advantages.

But so many claims are made nowadays. How are you going to be sure that those concerning the Roark are what they are—straight-from-the-shoulder, unexaggerated **facts?**

The answer is simple enough. **Try the Roark and see its operation for yourself.** Note the improvements that it presents, taking special note of the fact that it is **outside** the working barrel, permitting a longer pump stroke, with greater capacity. Note also that the ball and seat of the Roark, being outside the working barrel, is larger than that of the traveling valve—an important, scientifically correct feature that reduces B. S. and cut oil because it lessens the speed at which the crude enters the valve and in that way maintains its gravity.

THE ROARK—no loose, leaky leather rings; longer pump stroke—bigger capacity; bigger, sturdier California type ball and seat—less cut oil and B. S. The new-day standing valve, with real improvements.

Note, too, that the design of the Roark does away with cups and leather rings; that it includes a California type ball and seat, protected from above by a heavy perforated steel plate.

Note **all** the distinctive features of the Roark. Then install it and watch its operation. **If it doesn't meet our statements in every way, return it and your money will be refunded.**

Can anything be fairer than that? Isn't the possibility of permanently increasing your pumping efficiency worth the effort of trying the Roark and judging it for yourself? We leave it to you.

At Your Supply Store or Direct

119

Texas Oil Pump Co

Waco, Texas

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

FOR SALE—Complete Gasoline Plant, 2 70-H. P. Bessemer gas engines, 1 12x6x 12 Ingersol Rand Compressor, 1 17x12 Ingersol Rand Duplex Pump, high and low and storage tanks, electric light plant. R. W. Russell, St. Marys, W. Va.

FOR SALE—Eight 7,200 gallon tank cars, standard gauge; also five 5,000 gallon tank cars, for trolley car track; sixteen 1 ton Koppel coal charging cars for boiler rooms. Immense stocks of Pipe, Valves and Fittings in all sizes. Wire, phone or write. Tate, Fisher & Rice Co., 258 Washington St., Boston, Mass. Telephone Main 8365.

FOR SALE—Several gas engines and compressors. All makes and sizes. Electric plants, both D. C. and A. C.; four drilling machines. R. W. Russell. St. Marys, W. Va.

FOR SALE—One No. 23 Star Drilling Machine fully equipped with necessary tools. I am offering this machine at a special price for immediate sale. L. H. Brocksmith, 1856 Menard Street, St. Louis, Missouri.

GENERAL GEAR & MACHINE WORKS
"If It's Done in Metal, We Do It"
Gear cutting, blacksmithing, machining, welding, die making, and metal stamping.
115 South Detroit, Tulsa, Okla.

OPERATORS ATTENTION
If you want to sell your second hand casing or line pipe or if you are in the market to buy, it will pay you to get in touch with us. We are the oldest established dealers in our section of the country and we are reliable.
WESTERN BROKERAGE & SUPPLY CO.
Eastland, Texas

TANK BOLTS

SAME-DAY SHIPMENT

⅛x¾-inch, ⅜x¾-inch, ⅜x1-inch, ⅝x1¼-inch, ½x1-inch.
Write or Wire for Quotations

STEEL MFG. & WAREHOUSE CO.

1447 Genesee St. Kansas City, Mo.

FOR IMMEDIATE SHIPMENT—Second hand line pipe and casing in A-1 condition:
10 miles of 3-inch Standard line pipe.
5 miles of 4-inch Standard line pipe.
5 miles of 6-inch Standard line pipe.
70,000 feet of 6⅝-inch 20- and 24-lb. casing.
60,000 feet of 8¼-inch 28-lb. casing.
20,000 feet of 10-inch 35- and 40-lb. casing.
5,000 feet of 12½-inch 50-lb. casing.
2,000 feet of 15½-inch 70-lb. casing.
JOSEPH DAVIS COMPANY
613 Kennedy Bldg., Tulsa, Okla.

ATTENTION!!!

OIL WELL TOOL MANUFACTURERS

We are offering, subject to prior sale:
Forged and Rough Turned
CHROME-NICKEL STEEL BARS.
(S. A. E. 1035)
Sizes: Diameters 6 1/16; 8 1/16; 10 1/16 inches.
Lengths 12 ft. 8¾ in.
This is a high grade steel suitable for reforging or machining various oil well tools.
Heat numbers stamped on each bar. We have sold large quantities of this material for oil field use where it has proved highly satisfactory. Our facilities insure an adequate supply at all times.
We shall appreciate an opportunity to quote you. Let us have your inquiries.

NATIONAL FORGE & TOOL COMPANY
Irvine (Warren County) Pa.

FOR SALE—EQUIPMENT

PRACTICALLY NEW—32"x12' Bridgeford Geared Head Engine Lathe, late type, eternal face plate gear drive, single pulley, quick change, compound rest, a wonderful buy at $1,750.00 f. o. b. Bridgeport,
LUCAS & SON, Inc.
Bridgeport, Conn.

ONE 72"x18' Boiler, 66-4" flues used 2 years, fine condition, 200 pounds pressure; one 48"x12'; one 54"x14'; one 60"x18' good condition, 100 pounds pressure, one 150 h.p. boiler feed, one 10x12x8 steam pump, one pressure tank, boiler shell new heads 54"x18'; 5-h. p. Electric Motor, direct connected water pump, 40 pounds pressure 180 gallons minute. 10 h. p. Stationery Gasoline Engine. W. H. Underwood, Hutchinson, Kans.

MOTOR GENERATORS SETS

One Rathbun Jones gas engine, 175-H. P. direct connected to Westinghouse D. C., 150 K. W., 125 volt generator.
Westinghouse gas engine, 175-H. P., direct connected one end to Westinghouse D. C., 100 K. W., 125-volt generator, other end to 150-K. W., A. C., 3-phase 60-cycle generator. Three extra cylinders for Westinghouse engine.
One Marionette gas engine. 65-H. P., direct connected to 45-K. W. Bullock generator, 125 volts, D. C.
These machines are now in use. Delivery can be made after August 1.

ENAMELED METALS COMPANY
Etna Pa.

FOR SALE—At a great bargain, a Sullivan "P" diamond core drill. It will drill to a depth of 5,000 feet. Lloyd W. Johnson, 5897 Washington Ave., St. Louis, Mo.

I OUGHT to be able to sell equipment through this section. It must bring good results, because it is filled with Classified Advertisements every week. Guess I'll try it.

P. & H. TRENCH MACHINE
Cuts 24 inches to 28 inches wide by 7 feet, 6 inches deep; wheel type No. 105; has only cut ¾ mile; gasoline engine drive. Cost $13,000—1923—price $7,100 cars Indianapolis, Ind.
ROSS POWER EQUIPMENT CO.
Indianapolis, Ind.

FOR SALE—150 feet of 70-pound 15½-inch; 1,000 feet 40-pound 10-inch; 2,700 feet 8¼-inch 32-pound 8-thread and 3,400 feet of new 24-pound 6¼-inch 10-thread J. & L. Woodlawn. Special casing; 100,000 feet of 2-inch line; 20,000 feet of 2-inch tubing and rods; also, excellent powers, engines, tanks, and other equipment. J. F. Arnold Co., Decatur, Ind.

COMPLETE Union Tool Rotary drilling rig; twin-cylinder engine; two 45-H. P. boilers; 2,400 feet of 4-inch drill stem; new Hughes rock bit; complete set fishtail bits; mud hog pump. This rig is complete and in good condition. Can be seen at Dixie Oil Co. lease, Cement, Okla.

GRAY IRON CASTINGS
Inquiries for Prices
Appreciated and Promptly
Answered
LAURELTON FOUNDRY CO.
Laurelton, Pa.

LEASES—PRODUCTION

10c AN ACRE to $25 an acre. Texas Oil Leases. Easy terms. Get particulars. No obligations. Gulf Realty Co., 285 Bedell Bldg., San Antonio, Texas.

ROYALTIES—Deed to one-half land owners oil and minerals, in the great Cumberland County, Kentucky, Field; close to production, on structure, approved by reliable geologists, $2.50 per acre, up. Frank Richardson, Columbia, Ky.

LEASES—PRODUCTION

BLOCK OF LEASES—Hutchinson Field. On good geology. Report furnished. Will deliver solid for four eighties back. Needham & Purdy, Lyons, Kans.

ALLEN COUNTY, KENTUCKY—Three to 10 barrels settled production; 50-acre lease, wells within 300 feet; low price or drilling proposition. Box 489, Bowling Green, Ky.

THE BIG PLAY is in Seminole where lease and royalty values increase rapidly making investment safe and profitable. Write G. R. Jordan, Wewoka, Okla.

BE SURE to have your advertisement in the Semi-annual Review. It will be published on July 31. Mail your advertisement NOW so you will be absolutely sure of getting in that issue.

MARATHON FOLD AND TEXAS PANHANDLE
LEASES in Reagan, Crockett, Pecos, Terrell, Glasscock, Sterling, Gray, Carson, Armstrong, Donley, Wheeler, Hemphill and other counties in Marathon Fold and Texas Panhandle. Lowest prices; best locations. Write for free maps and reports. P. R. MacIntosh, 215 Neil P. Anderson Bldg., Fort Worth, Texas.

FROM NOW ON, when I want to do business with the real men of the petroleum industry, I'm going to put my advertisement right here in this Classified Wants Section.

FOR QUICK PROFIT possibilities investigate this closeup lease offer—Have 100 acres only few hundred feet from wells now producing high gravity oil from 350 foot depth in Kentucky—well will be drilled near center of lease immediately—this acreage worth $100 to $200 today—should bring around $400 to $500 per acre when my well reaches shallow oil—Offer 2 acres or more close to well site for only $60 per acre until August 10—Write or wire Frank Weeks (owner) Virginia, Ill.

ROYALTY STROUD FIELD
Trend of big production running toward tract in which fee owner will sell up to one-half royalty. Half mile from big production. Quarter mile from four drilling wells. Large operating company. Phone Osage 6889. Address Box A-320, care The Oil and Gas Journal, Tulsa, Okla.

OPERATORS ATTENTION
Survey 2,458, south part Archer-Baylor County, surrounded by many drilling tests and producers. Worthy of prompt investigation. Will sell in fee 120 acres at $100 an acre. Address owner, Jno. J. Dillon, P. O. Box 194, Denver, Colo.

OIL ROYALTIES
On the best structures in Routt and Moffat Counties. Looked upon as one of the most important oil fields in the Country. Get in while prices are reasonable. F. W. Thomas & Co., Mount Harris, Colo.

McMULLEN and Live Oak Counties, Texas, recognized today by the leading oil men and geologists as the coming big oil field of South Texas. Choice commercial leases. Large and small tracts. Drilling contracts. Acreage in fee with all mineral rights. Bargains; easy terms. Prices advancing rapidly. Bank references furnished. Gulf Leasing Co., 525 Brady Bldg., San Antonio, Texas.

TEXAS

CARSON COUNTY—Our well, the Culbertson strikes oil and gas at 1,210 feet; first shallow record for the Panhandle; we are selling limited amount our acreage around this well; get in while prices are low—now $10 to $100; large companies have acreage about us; late contour map and weekly advice of progress free.
TEXAS-OKLAHOMA LEASE CO.
1418 Kirby Bldg., Dallas, Texas

LEASES—PRODUCTION

ROYALTIES for sale on active structures in northern Colorado. Thomas P. Corbett, 876 Fourteenth St., Boulder, Colo.

OPERATORS—The stampede is on in Montgomery County, Mississippi, world's next big high gravity oil field. Winona, Miss., mecca of oil men. Balcones Fault leases. W. C. Brooks, Memphis, Tenn.

JUST THINK! $2.80 will pay for sending a four-line advertisement all around the world, four times. A four-line Classified Advertisement usually consists of 24 words and you know a great deal can be told in a few words. Mail your advertisement to the Classified Section now so that you will get in next Thursday's issue.

WILL GIVE 5,000-ACRE OIL LEASE FREE
to anyone who will drill or finance the drilling on my 10,000-acre oil lease or one-half interest in the entire body. Located in East Tennessee and with every favorable indication of a fine body of oil. Have had considerable experience in locating oil and very successful in making drilling location. Drilling depth from 2,200 to 3,000 feet. Will be pleased to confer with interested parties on above proposition. R. H. Whittle, Knoxville, Tenn.

BUY FROM Land Owner. New leases, 50-cent bonus. Production four adjoining counties. Box 458, Purcell, Okla.

HAVE GOVERNMENT Leases, some patented land; well on structure; 10 to 50 bbl. wells at 500 to 700 feet, 42 to 54 gravity. Also general merchandise store. Come and look it over. A. H. Spencer, Bluff, Utah, or Kayenta, Ariz.

BE SURE to have your advertisement in the Semi-annual Review. It will be published on July 31. Mail your advertisement NOW so you will be absolutely sure of getting it in that issue.

FOR SALE—At bargain prices, oil and gas leases, production and royalties in the Kentucky shallow fields. For full particulars and maps, address W. P. Harley, Bowling Green, Ky.

SOUTHEAST New Mexico has opened new field with 37 gravity oil from 1,950 feet with 47 feet of sand. Intensive drilling campaign just starting. We own leases all parts of Southeast New Mexico. Orcutt-Harris & Co., Inc., 816 Colcord Bldg., Oklahoma City.

MEDINA COUNTY

$1.50 an acre

We have a very limited supply of Medina County, Texas, leases practically hemmed in by both the Humble and Mid-Kansas people which we are offering for only $1.50 an acre.

We also have many other leases. We have Reagan County 4 miles from Wrightsman's test; Bexar County 4 miles from Raybourn test; and several others close to wells. Here are a few of them:

Reagan County	$3.50 per acre
Pecos County	$1.00 per acre
Crockett County	$2.00 per acre
Crane County	$1.00 per acre
Karnes County	$2.00 per acre
Gillespie County	10c per acre

30 other counties.

Free map of Texas showing Marathon Fold and Balcones Fault given with each inquiry. Write today for our latest list of bargains. Don't buy any leases until you see ours. We sell for less. Get particulars at once. No obligation.
GULF REALTY COMPANY
287 Bedell Bldg. San Antonio, Texas

IF I had my Wants listed in this section they would receive the same attention that thousands are giving the good advertisements already here.

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

PRODUCING Royalties in Texas bought and sold. J. F. Marion Co., Magnolia Bldg., Dallas, Texas.

WHITE SPACE at the top and bottom of an advertisement makes it conspicuous. Ask for it in your next advertisement. Figure the cost at regular rates per line.

OIL ROYALTY—In the new Blackwell Pool. Units in 160 acres, offset to production. Royalty deed from land owner to buyers. Write today for full information to J. R. Sparks, Blackwell, Okla.

THE SMALL SUM that it costs to insert an advertisement in the Classified Section of The Oil and Gas Journal enables you to place your desires in the minds of men who are always interested in a good proposition.

MEXICO

We have special facilities for looking after the interests of Oil Companies or individuals whose holdings in Mexico do not justify the maintenance of an office force or manager. Correspondence solicited.

Cia. Bancaria E Industrial de Tampico S. A.
Capital $400,000.00
H. Y. Blake, Manager
P. O. Box 492, Gomez Bldg.
Tampico, Mexico

TO LEASE for oil and gas, several hundred acres lying in direct line between Malone No. 1 in Chautauqua County and new well in west edge of Montgomery County, Kansas; both wells in the second break in lime and reported at 400 and 4,000 bbls. respectively. M. C. Sadler, 1053 Faxon Ave., Memphis, Tenn.

BE SURE to have your advertisement in the Semi-annual Review. It will be published on July 31. Mail your advertisement NOW so you will be absolutely suer of getting in that issue.

640-ACRE oil and gas lease—Elk County, Kansas. Township 30, range eight east, Sections 1-2-11-12. Several wells just north this acreage producing 50-200 bbls. Largest gas field in West just southeast of our lease. Wil sell outright or consider drilling proposition on reasonable basis. Hunt, 339 Brisbane Bldg., Buffalo, N. Y.

NEW MEXICO OIL & GAS LEASES

Forty acres for $10. We offer five-year leases in Valencia, McKinley, Sandoval, Torrence, Guadalupe, Quay, De Baca, Rio Arribba, Soccorro and Chaves Counties, from 25 cents to $1 per acre. Perfect titles and low rentals. Write for maps and particulars.

NEW MEXICAN EAGLE OIL CO.
Saupla, Okla.

HELP WANTED

SUPERINTENDENTS, Engineers, executives, now earning $3,000 to $25,000, will find out individual, confidential service a dignified and effective medium to make desired connections. Personally conducted by Mr. Jacob Penn, the eminent employment authority, known to leading business men throughout America. Not an employment agency. Inquiries solicited only from persons with records of successful performance and stability. Jacob Penn, Inc., 305 Broadway, New York City, N. Y.

BE SURE to have your advertisement in the Semi-annual Review. It will be published on July 31. Mail your advertisement NOW so you will be absolutely sure of getting in that issue.

SALEMAN WANTED—One to three lease salesmen have wonderful opportunity in the Russel district. Write or see Raber and Gorges, 116½ East Fifth St., Hutchinson, Kans.

POSITION WANTED

INSTRUMENT MAN—With training in oil geology, wants position with some geological firm or oil company. Experience in Mid-Continent fields. Can furnish reference. Address V. A. Modeer, Abbatt Hotel, 412 East Tenth St., Kansas City, Mo.

STENOGRAPHER, translator, secretary; fluent Spanish, French, Portuguese; native American; single; long residence in Europe and South America; knowledge of geology, index fossils and oil field nomenclature. Address Box A-310, care The Oil and Gas Journal, Tulsa, Okla.

THE SCHEME of life is so arranged that some men have capital and need equipment, while others have salable articles and need cash. For these men, The Oil and Gas Journal Classified Section provides an excellent opportunity to broadcast their wants.

REFINERY ENGINEER—Graduate Chemical Engineer with experience in operation, laboratory and construction, desires position in operating or engineering department. Address Box A-290, care The Oil and Gas Journal, Tulsa, Okla.

YOU WILL always be right in reading this Classified Section, as it is the best Petroleum Publication Classified Section in the world. It will help you.

RESPONSIBLE POSITION wanted by civil engineer who has had several years 'oil field experience managing large oil properties. Now employed developing Oklahoma properties, but desires employment in Rocky Mountain States. Excellent references. Address Box A-243, care The Oil and Gas Journal, Tulsa, Okla.

OIL AND GAS man age 38, eighteen years experience, desires position in charge of drilling and production, city plant or field work, nine years with present company, can handle men diplomatically and get results. Unquestionable references. Reasonable salary. Address, R. D., 3865 W. 40th St., Cleveland, Ohio.

PRACTICAL man, a driller for 10 years and 10 years running tools and production superintendent wishes place with reliable company. Address Box A-322 care The Oil and Gas Journal, Tulsa, Okla.

WANTED

WANTED—Party to help develop large acreage in southwest Indiana. F. M. Weister. Box 514, Carnegie, Pa.

WANTED—About 30 acres land in fee with all oil and mineral rights, located on best structures in Oklahoma or Texas, with geologist report on same, also, would take option on 7,000 acres. Give full particulars, price and terms on your offering. Address Box A-311, care The Oil and Gas Journal, Tulsa, Okla.

SEMI-ANNUAL REVIEW

The 1924 Semi-annual Review of the Petroleum Industry will be published July 31.

It will contain a vast wealth of expert information covering every activity of the producing, refining, marketing and exporting ends of the industry.

It will be presented in such form that the detailed facts and figures will be easily available to the reader.

Thousands of readers will refer to it constantly, thus providing an excellent advertising opportunity.

The Oil and Gas Journal has the greatest Petroleum Classified Section in the world. It was elevated to its high position of respect because of its absolute merit in helping the men of the industry. Producers, refiners, marketers, pipe liners and exporters study the Classified Wants Section every week. Why not place your advertisement where they can see it.

Mail your advertisement this week so that you will be absolutely sure of having your wants listed in the Semi-annual Review. It will help you.

WANTED

WISH TO communicate with reputable contractor regarding drilling of test well in Brewster County, Texas. F. Heman, Box 58, Olive, Cal.

WANTED—Producing royalties, Oklahoma and Kansas. Give full details. P. O. Box 502, Independence, Kans.

WANTED — 250 investors to put in $100 each to drill well on block of acreage on structure approved by geologists. For further information write owner. Address Box A-280, care The Oil and Gas Journal, Tulsa, Okla.

WANTED—Three strings of one-run casing in A-1 condition in sizes 12½, 10 and 8-inch, standard weights. Send prices, length and weight. Wellington Oil Company, 604 Central Savings Bank Bldg., Denver, Colorado.

DRILLING WANTED—Submit your drilling proposition to us either contract or acreage propositions, we are open for a good deal. Raber and Gorges, 116½ East Fifth St., Hutchinson, Kans.

WANTED—2,000 to 2,500 feet of 6⅝-inch oil well casing with long collars, 20 to 24 pounds to the foot, located as near as possible to Illinois. Address E. A. Keith, P. O. Box 332, Martinsville, Ill.

WANTED—500 to 2,000 foot drilling for new machine and tools. Will give satisfaction and appreciate any proposition. Address Box A-321, care The Oil and Gas Journal, Tulsa, Okla.

WANTED—Party with drilling outfit to drill a well in Kevin Sunburst proven territory, Montana, for an interest in well and lease. E. Yanish, Shelby, Mont.

WANTED—Party to drill wells and furnish casing on 50-50 proposition. Shallow fields. Have acreage in Kansas and Oklahoma at low price. Act quick. Cooperative Oil Co., Vinland, Kans.

FINANCIAL

GEOLOGIST, petroleum engineer thoroughly familiar with Mid-Continent lease and royalty values and in position to guarantee satisfactory profits, offers his services to individual or group wishing to invest in oil properties, either producing or speculative. Address Box A-312, care The Oil and Gas Journal, Tulsa, Okla.

FARM LANDS FOR SALE

560 ACRES—Fine stock and grain farm. Rock road close, to Kansas City. Forced sale. Write for particulars and price. W. O. Snider, Lees Summit, Mo.

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CORE DRILL your structure with diamond drills and reduce hazard of wildcatting. Let us help your geologist correlate structure before you put cable tools at work. The cost is relatively small and the possible saving enormous. On well located tracts we will accept acreage in lieu of profits from drilling. Drilling Corporation of America, 205 Cosden Bldg., Tulsa, Okla. Phone Osage 8183.

CAPITAL—Eastern and Canadian can be quickly reached through brokers, bank managers and salesmen; valuable information upon request. Amster Leonard, First National Bank Bldg., Chicago, Ill.

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FOR SALE—Tank station, doing a nice wholesale business. Home Oil Co., Hugo, Okla.

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Completely equipped machine shop employing 11 men, near shallow oil field, another now opening; a good paying proposition; 17 years in business; only shop in 50 miles radius; reason for selling, owners going into implement manufacturing business. Cameron Machine Shop, Cameron, Texas.

OIL OPERATORS and Lease Men—Weekly scout reports on Kansas wildcat wells; $10 per month. Special reports made upon request. Independent Oil Scouts Association, Box 885, Wichita, Kans.

PANHANDLE, Carson County, Texas, the coming oil city. Trackage, business and residence lots for sale by owner. Fred Horsbrugh, Amarillo, Texas.

CHANCE OF a lifetime. Have two inventions; pipe machine to screw and lay line pipe; also transmission for getting side power upon truck. Machine catches pipe from side, screws and lays line on one-half usual time. Want party with $5,000.00 put in escrow to build machine, buy Dodge truck, pay patent, incorporate a company; money used for this only. For further information write F. S. Fea, 1161 Pacific Ave., Long Beach, Calif.

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	One Time	Two Times	Three Times	One Month
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9 lines..	2.25	3.60	4.95	6.30
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OIL FIELD LEGAL BLANKS—Leases, assignments, releases, township plats, gauge books, run tickets, time books, well records, etc. Request on your letterhead gets free catalogue. Olds Press, 215 East Third St., Tulsa, Okla.

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BILLIE WHITSON—Will you please let us know where you are as Mamma and I need you. Rozella. Address 435 W. 42nd St., Los Angeles, Calif.

YOU WILL always be right in reading this Classified Section, as it is the best Petroleum Publication Classified Section in the world. It will help you.

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Each Hercules Engine will develop the full rated horsepower. That is one reason why there are over 350,000 Hercules Engines giving satisfactory service throughout the country today. Such a distribution necessitates a nation wide organization. You are thus insured prompt and efficient service. An accident—rare with a Hercules—does not hold you up. There's always a Hercules dealer nearby.

THE HERCULES CORPORATION
Engine Dept. E Evansville, Ind.

OIL COMPANY FILES STATEMENT SHOWING LOSSES IN SOUTH DAKOTA

SIOUX FALLS, S. D. July 21.—When a recent hearing was held before Judge James D. Elliott, of the United States Court, in this city, in the matter of the application of the Independent Home Oil Co., a North Dakota concern, with a gasoline filling station at Claire City, S. D., for an order of the Federal Court restraining the State Highway Commission of South Dakota from selling gasoline at retail in competition with regularly established dealers, it was stated by Judge Elliott that the claim of the defendants indicated that when W. H. McMaster, Governor of South Dakota, on August 7, 1923, ordered State gasoline stations to sell gasoline at 16 cents per gallon—about 10 cents under the prices then prevailing at regular filling stations—the Standard Oil and independent dealers were making an excessive profit.

To this the attorneys for the North Dakota Company replied that the profits were temporarily excessive, but would have to be balanced with lesser profits and losses over a period of time. The attorneys were given an opportunity by Judge Elliott to produce an affidavit showing this to be true. This affidavit now has been filed by the North Dakota Company and will have a bearing on the final decision of Judge Elliott, which may not be rendered until the closing days of July or the forepart of August. The right of the State to sell gasoline at retail in competition with regular dealers will be determined by Judge Elliott's decision when it is rendered.

Profits Wiped Out

In an affidavit just filed the North Dakota Company, which is plaintiff in the action, alleges that for 1922 the profits in jobbing gasoline were .24 cents per gallon—less than a quarter of a cent—and that in 1923, on account of the lowered price, due to the action of Governor McMaster in arbitrarily lowering the price at State stations to 16 cents, profits were lacking.

It is set forth in the affidavit that the leading old line companies, principally the Standard Oil Co., adopted the policy of meeting the price set by the South Dakota Highway Commission. This, in turn, reacted upon the independents, who were forced to lower their price. The effect was, the affidavit says, to harm the independents. It is set forth that it is the practice of the Independent Home Oil Co. to purchase supplies of gasoline by contract, so as to sell retailers a constant supply. The Standard, however, it is set forth, took advantage of a temporary lowering of the spot, market which was caused by a sudden flooding of supplies through the discovery of much new oil in California.

The affidavit, which is signed by C. G. Lindquist, secretary of the North Dakota Company, denies that it is supporting a monopoly or is acting in concert with other dealers in maintaining an arbitrary price, or that it has ever done so.

Losses Forced by State

Meeting the contention of the defendant State Highway Commission that there was no competition by the State, but that the publicity concerning the State's action was what caused reductions in gasoline prices in South Dakota, the affidavit alleges that the company has sold generally in the trade territory of Aberdeen, S. D., and Watertown, S. D., that by Section 4365 of the South Dakota Code of 1919 it is unlawful for any distributor to charge a lower price in one section of South Dakota than in another, save for the difference in freight rates, and that, therefore, the old line companies were forced to make their prices uniform throughout the State of South Dakota, thereby causing the plaintiff the losses mentioned.

The affidavit further alleges that if the old line companies meet the present State price of 17½ cents per gallon, as it is said they threaten, entire destruction of the business of the plaintiff and other independents will follow. It is further alleged in the affidavit that the South Dakota Highway Commission is not selling gasoline by establishing central points for the sale of gasoline as an incident to the business of maintaining the highway department of South Dakota, but for the express purpose of attempting to fix a standard price for the sale of gasoline to destroy the plaintiff's business.

OIL FIELD WORKERS DISPLAY KEEN HUMOR

(Continued from Page 21)

to cut down the time spent in going to and from work and thus leaves the workman in the oil fields a few hours daily for rest and recreation.

Regular weekly boxing matches, wrestling matches and other forms of athletics are now a part of the routine of some of the larger company camps. Regular pay days and the presence of the workman's family has done much to tame the periods of spending that often took place in the field development of earlier days when a man was paid only once in several months. In many other ways, the companies have made a sincere effort to make the work of the men lighter and to afford them more time for recreation. They feel that this time is necessary for the proper recreation and rest which should precede each day's work.

Much of the devil-may-care spirit of the older fields is gone, except in the earliest days of boom towns. Proper organization has kept down much of the school-boy practical joking and saloon-day stunts. The personnel of the drillers has changed, but the field men today are much like the drillers and tool dressers, pumpers and roustabouts of former days. There is something about the work of producing oil which requires a man of peculiar characteristics. The men that fit these characteristics are akin whether they took part in the developments of the fields of 1880 or 1920.

A good joke is still a good joke on the derrick floor of a drilling well. "Chewing" is a necessary part of the equipment of visitors. The "badger" game is still played, periodically, novices must stand the tests of the drilling fraternity, and in many other ways do the drillers of today show that they are not far removed from the drillers of yesterday.

AMENDMENTS TO RULES ON SALE OF PRODUCTS

OKLAHOMA CITY, Okla., July 19.—All oil refiners, manufacturers and marketers of the State have been notified by the Corporation Commission that a hearing will be held by the Commission on August 12, on proposed amendments to rules governing the manufacture and sale of oil products and to discuss the feasibility of amending other rules or promulgating new rules of benefit to the industry.

One proposed amendment is to order No. 1575, which would require refiners and manufacturers to make special reports of qualities and grades of products to the Commission and to show distillation tests and correct analyses under oath. It would require that distillation test reports accompany bills of lading.

ALLEGE OIL UNDERCHARGED

Unique allegations are the basis for suit filed by the Missouri, Kansas & Texas railroad against the Rio Grande Oil Co. at El Paso. The railroad seeks to recover $21,853.42 alleged undercharges on 124 cars of oil. The railroad charges that the refining company "had caused crude oil to be blended with casinghead gasoline, thereby getting a lower freight rate." The complaint states the rate on crude from Pioneer, Tex., is 27¼ cents and on casinghead gasoline 26 cents and suit is filed to recover the difference.

NEW YORK STATE OIL PRODUCER TELLS IOWANS THE STORY OF OIL

An Iowa oil man calls attention to a noteworthy example of telling the story of oil to the public, enclosing an interview with John P. Herrick, chairman of the New York State Oil Producers Association, published in the Des Moines Capital, and suggesting that oil men who make a study of "The Oil Industry's Answer" should be able to seize such opportunities to talk interestingly about oil when asked for an interview by the daily press. The interview with Mr. Herrick in the Capital follows:

"Motorists may look forward to an ample supply of gasoline for the balance of this year, at least, at moderate prices," said John P. Herrick of Olean, N. Y., to a Capital reporter Saturday morning. Mr. Herrick is a member of the American Petroleum Institute, a student of the oil industry, in Des Moines on his way home from a tour of the Mid-Continent oil fields, a journey that extended as far south as the City of Mexico.

Gasoline in Mexico

"I wish to qualify what I said about moderate prices," said Mr. Herrick. "The only satisfactory sale in gasoline or any other commodity is the one in which both buyer and seller profit. Mexico City, five times the size of Des Moines, has 15,000 motor vehicles. Owing to the altitude, 7,400 feet above sea level, an automobile consumes 20 per cent more gasoline than in Des Moines. Gasoline there is sold by the kilo, and retails at 38 cents a gallon American money. There is a city tax of 4 cents a gallon, transportation charges are high and gasoline is shipped from the refineries on the seacoast, several hundred miles away, in tank cars. The city imposes a special tax varying from $2.50 to $5.50 a month on pleasure cars, depending on number of passenger seats, instead of rated horsepower. Speeding is fined at the rate of one peso for each kilometer. The city limit is 15 kilometers, around 10 miles an hour, and the average speed is 50 kilometers, so when the traffic cops make a haul the fine is excessive. American cars control the Mexican market. There are some of the high priced cars, but they are not numerous. Many of the Fords are disguised with fancy leather upholstery and trimmings, as they are in Havana. There are few curb pumps in Mexico City, no beautiful filling stations such as are found in Des Moines. Many of the tank wagons are moved by mules. An import tax adds to the cost of American cars, but our manufacturers give such excellent service that American cars are very popular. As Mexico prospers there will be an ever-expanding market for American pleasure cars and trucks.

Where the Oil Comes From

"There are in the United States today more than 250,000 oil wells, producing an even 2,000,000 bbls. of crude oil daily, an average of 8 bbls. per well. More than 125,000 wells produce less than ½ bbl. daily. The oldest continuously producing oil well is located in eastern Ohio and has been producing 60 years; today the output is a fraction of a barrel. The average life of an oil well is placed at 10 years, and with the exception of one area on the Pacific Coast an oil well begins to decline in production from the day it is completed. If all new drilling was stopped it is estimated that the oil production of the United States would decline 40 per cent in one year. This makes it necessary to keep up a big drilling and wildcatting campaign continuously to find new fields to replace those that are waning. For many years it was believed that no oil would be found west of the Mississippi River. Today some of the world's greatest oil fields are found in the lower Mississippi Valley. Within 15 years Wyoming has taken its place in the ranks of major producing States. Colorado today has two promising oil fields, one located east and one west of the continental divide. Within the past year New Mexico has developed a promising area and Montana is now classed as an oil State of promise. Alaska has some promising oil areas and Utah and Arizona are to be thoroughly tested for oil. Alaska has one small oil pool and a little oil refinery that runs 75 bbls. of crude a day through its one still. No oil territory of any value has ever been developed east of the Alleghany Mountains although many hundreds of test wells have been drilled. Though you seldom hear of New York as an oil State, there are 14,000 producing oil wells within its borders. In the Eastern or Appalachian oil field, extending from Allegany County, New York, to the Kentucky line, there are 121,000 oil wells, producing what is known as Pennsylvania grade crude, the highest grade oil found in North America. There is not a State in the Union that has not been tested for oil through the drilling of wildcat wells, as test wells are called. It is only in the oil regions and the mining regions where real romance is found, for there it is that Fortune comes and goes in a night. Who knows? Iowa may be an oil State some day.

More Than 500 Refineries

"There are in the United States 563 refineries with a daily charging capacity of 2,900,000 bbls. of crude oil, or 30 per cent in excess of the daily production. Around 50 per cent of these refineries are located in Oklahoma. The strategical locations of the greatest refineries are on the Atlantic and Pacific seaboards, the Gulf Coast and on the Great Lakes. When the first small refineries were erected the only thing saved from crude oil was kerosene. Today kerosene is one of more than 300 by-products of crude oil. The average yield of gasoline from light grades of crude oil is 10 gallons to the barrel, or less than 25 per cent. Some grades of crude yield practically no gasoline. In refining crude oil there is an absolute loss of 5 per cent of all crude refined, due to evaporation of the lighter products in the form of vapor. There is a fortune for the man who can devise a plan to prevent this loss. A gallon of gasoline weighs 6.6 pounds. American oil products are marketed all over the world. One great American oil company gave away a million lamps in China to induce the natives to buy and burn kerosene for lights at a time when kerosene was a drug on the market in this country owing to the development of electricity.

Piping Oil Long Distances

"Every day oil is piped from Texas and Oklahoma oil fields to refineries on Long Island, Bayway and other New Jersey points and to Philadelphia and Baltimore. Within the past two months it has become possible to pipe crude oil from the Wyoming oil fields to Atlantic Coast refineries owing to the completion of a big new pipe line from the Salt Creek oil field to Kansas City. Some of those lines are more than 2,000 miles in length. The oil moves in a steady stream, summer and winter, across the plains, under rivers and over mountains, at an average speed of 4 miles an hour under a pressure of 900 pounds to the square inch. There are pumping stations at fixed points to give the oil a boost on its way to the sea. These trunk lines supply the Wyoming refineries and a long string of refineries located in Kansas, Oklahoma, Illinois, Ohio, Pennsylvania and New York, as well as a refinery at Sarnia, Canada. The pipe lines are buried in the ground, are inspected regularly by pipe line walkers and protected by telegraph and telephone communication, so that any sudden break in the lines is reported promptly and the pumps shut down until the break is repaired. More than 25,000 miles of telegraph lines are in the service of the pipe line companies. It would be impossible to move this great volume of oil by rail, and the pipe line rate is much cheaper and pipe transportation is not affected by railroad strikes and washouts. The fire hazard is also eliminated to a large extent. For many years an oil pipe line crossed Central Park in New York and millions of barrels of oil passed through

(Continued on Page 128)

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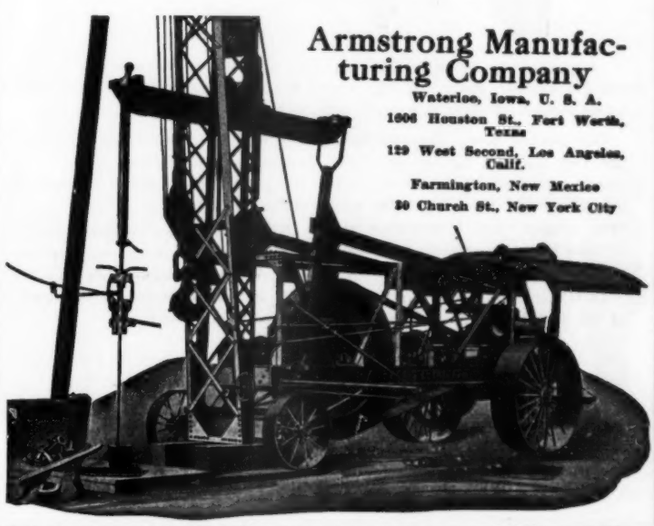

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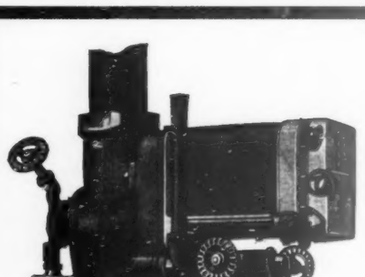

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HOW CRUDE OIL PRICES ARE MADE; AUTOMATIC REFLECTION OF FACTORS

From the Lamp

One of the fundamental but little understood truths of the oil business is that prices—both of the raw material and finished products—are established exactly as are prices for wool or horseshoes, or in fact any other staple or manufactured products.

There is no directors' room anywhere in which a group of men can decide when crude oil shall be marked up or down. Nor is there any marketing company anywhere which can advance or lower prices to the consumer solely because its managers think they should receive more or take less for their products. Prices are the inevitable result of costs.

Because there are exchanges which act as clearing houses for buyers and sellers of stocks and bonds and of some of the principal commodities such as grains, cotton and coffee, the questions sometimes arises as to why there is no petroleum board of trade. There was such an exchange but it was in the earlier days of the industry when practically all of the crude came from a limited area. This exchange failed because transactions became purely speculative with the actual business of buying and selling going on outside its doors. There were periods of wild speculation and gambling in certificates supposed to represent oil so that the reported dealings afforded a very poor index of the value of the products. Since then the number of producing fields has greatly increased and with them the number of grades of petroleum. To create now an exchange to function on the lines of existing exchanges would necessitate a revolution in present methods of buying, selling, storing and transporting petroleum. It would add tremendously to overhead, because it would be essential to create middlemen and a multiplicity of machinery to perform services that are now almost wholly rendered by producers and consumers themselves.

Eliminates Middlemen

In organized produce markets almost no transactions take place directly between producers and consumers. Middlemen seek out the commodity from the producer, transport it, store it at convenient points, finance it to the extent necessary and ultimately deliver it to the consumer for use.

There are in the United States about 18 000 producers of crude and more than 500 refineries. For the most part the crude oil consumed by refiners is either their own production or is purchased in the open market through direct dealings between the producer, represented by his purchasing company, and the consumer. More than two-thirds of the oil produced in the Mid-Continent, Wyoming and California fields is consumed in the fields where the oil is produced, and to sell this through an exchange located in Chicago or New York City would be obviously impossible. The condition in the oil business is the reverse of that which obtains as regards, wheat, corn, oats, cotton and other commodities which are purchased from millions of producers who could not do business directly with a like number of consumers. The uselessness of middlemen in one case is as apparent as is their indispensable function in the other.

There is no other important raw material the grades and quality of which vary so much as in oil. The reduction to one grade or a few grades by mixture would have exterminated the small refiner, who has made his success on his ability to select particular grades of oil with superior qualities for the special products he desired to market.

The argument advanced for the establishment of an oil exchange rests on a premise that it would supply a more sensitive reflection of the true market. On the contrary, the imposition of middlemen and a host of speculators trading in certificates rather that in oil would almost certainly produce artificial periods of boom prices and depression. It is not proposed to trade in the products of raw petroleum but only in the grades of crude itself.

Nothing Quite Like It

It is hard to explain the mechanism of crude oil price-making because nothing like it is known in any other industry, but the system is the natural growth of conditions obtaining in the industry. And it is automatic in its reflection of the changing relation between production and consumption.

There is no one man nor one company that fixes the price of crude oil because there is no man nor company controlling a large percentage of production. There are thousands of individuals and small companies engaged in wildcatting and producing and they sell their oil in the market offering the best price.

Comparatively few of these producers, large or small, have their own refineries. The middleman who acts as broker, finding a market for the producer and oil for the refiner, is usually a purchasing company operating in connection with a common carrier pipe line. Because this purchasing company is dealing with hundreds or even thousands of owners of wells and cannot make a separate contract for each lot of oil, it publishes currently what it will pay for the crude it takes. This is known as the "posted price" and it is subject to frequent fluctuations.

Different prices are posted and paid for different grades of crude oil depending on their refining values. The Mid-Continent production, for instance, is divided into five grades, each yielding a different percentage af gasoline in the refining process, while California production falls into as many as 12 different classifications.

Must Offset Sales

Over any extended period the quantities bought by the purchasing companies must offset their sales but at any particular period they are likely to be buying more or less than they are selling on that day or in that week. Because of the manner in which oil is produced, they cannot take 1,000 bbls. from a producer today and 200 tomorrow. The producer has to be sure of the sale of all his production because he has only a very limited amount of storage and counts upon his pipe line connection to run his oil as this storage fills. The result is that the purchasing companies at times buy and run into their own storage considerably more crude than the refiners are taking from them. Sooner or later the reverse is true and the purchasing companies' storage is drawn upon to cover a deficiency between their receipts and their sales.

Just how the posted price fluctuates and reasons for it can best be shown by reviewing actual conditions of recent date. On May 12 last year the posted price of 33 gravity Mid-Continent oil was $1.45 a barrel. In June, over-production resulted in more oil being tendered than the purchasing companies could dispose of and as a result they had to give notice that they would pro rate their purchases, taking the same fixed percentage of each man's production. Some of the producers then found it necessary to obtain an outlet for the remainder of their oil for which they lacked storage facilities. This excess was thereupon sold direct to refiners, brokers and others at a price considerably below that posted by the purchasing companies.

Those refiners who took this excess crude at substantial concessions under the posted price were able to sell their finished products below the price of other refiners that were taking their supplies from the purchasing companies at the "posted price." When this situation became aggravated the refiners could not continue to take their requirements at the "posted price" and the purchasing companies were accordingly compelled, early in September, to lower the "posted

Coldwater Field of

price" to $1.30 per barrel, and again in November to $1.

A new phase opened when the industry discovered that the peak of production had passed, and some of those who had empty tankage decided that at the $1 price they could profitabiy buy more than their current needs, to fill their storage. The purchasing companies then found it possible to take more of the crude and before long they ceased pro rating. When this occurred no crude could be purchased by the bargain hunters at less than the "posted price"; on the contrary, those who had previously bought under the market found it necessary to offer a premium above the "posted price to fill their requirements. So another phase was inaugurated; the paying of premiums again took crude away from the purchasing companies and brought about an advance in the "posted price," on January 9, 1924, to $1.25, followed by advances until on March 8, the price was up to $1.75.

The process is a natural one developed through long experience to meet conditions. It will be clear to the reader that it is entirely beyond control either by producers or by the refiners. The rate at which finished products move into channels of consumption is the determining factor in all prices, not only of the crude but of the finished products obtained therefrom. There is at all times the freest play of economic factors and the largest units in the industry are as powerless as the smallest individual operator in accelerating or retarding the tendencies that influence prices which the crude will bring.

Back of all prices of finished products is the cost of the crude oil. When that advances there must sooner or later be a corresponding advance in prices. When it declines the saving is reflected at the most remote road side pump. What individuals or companies would like to get for their petroleum products has nothing to do with price making. There is a vast amount of finished products consumed and they will be bought from the suppliers who make the best quotation.

U. S. SUPREME COURT DECISION IN GAS CASE

The United States Supreme Court recently reversed a decision which failed to allow an adequate return for obsolescence of the equipment of a public utility gas company caused by the installation of more efficient patented devices.

The Pacific Gas & Electric Co. is the sole producer and distributor of gas in San Francisco. By municipal ordinances the company was directed to supply gas at not more than 75 cents per thousand. Claiming this rate would not yield a fair return, the company brought suit which was referred to a master who recommended dismissal of the suit. The court below affirmed the master's report. The master applied the "modified sinking fund method," involving an estimate of the life of the property and an annual allowance for future replacement on a 5 per cent compound interest basis. The master said: "It is assumed that loss of plant units by obsolescence and inadequacy, as well as by physical decay, can be forecast with substantial accuracy and provided for in advance of abandonment and replacement." The company objected, insisting depreciation should be ascertained upon consideration of a definite testimony of competent experts who made estimates on observed conditions. The company claimed that to lower cost of production it became necessary to abandon certain valuable property under conditions not reasonably susceptible of anticipation. The company also claimed the master failed to appraise certain patent rights through which manufacturing costs had been greatly reduced and to make proper allowance for the use of such rights.

In reversing the lower court, the Supreme Court said: "Obviously, under the theory accepted below, appellant worsened the situation for rate making purposes when it reduced the cost of manufacturing gas. Introduction of successful patented inventions enabled the public authorities to lower the rate base and gather all the benefits. The operating plant, made capable of producing gas at smaller cost, was declared less valuable. The result indicates error somewhere, either in theory or in application of principle. Obsolescence of one or more stations and perhaps other property theretofore of great value (possibly $800,000) followed installation of the patents, but the remaining plant plus the patents gave better results. As an operating unit the new combination had greater value; but the court below disregarded the demonstrated worth of the element which wrought this change. The obsolescence did not result from ordinary use and wear. Certainly it could not have been long anticipated—the patents were of recent conception; to provide for it out of previous revenues was not imperative, if possible. Former consumers were not beneficiaries; only subsequent ones could be advantaged. Our concern is with confiscation. Rate-making is no function of the courts; their duty is to inquire concerning the results and uphold the guaranties which inhibit the taking of private property for public use without just compensation under any guise. After adopting the reduced costs of manufacture for estimating net returns, the court gave no proper valuation to the inventions which caused the reduction, and thereby permitted property to be taken without just compensation. The amount of money actually paid to the inventors was not the proper measure of worth. Experience had demonstrated a much higher one; and to obtain the benfits of their use appellant sacrificed much. Installation of the inventions necessitated new outlay and abandonment of property theretofore valuable—both necessary in order that the cost of manufacture might be reduced. If appellant's permissible profits depend upon the lowered cost and it is denied adequate return upon property which made the reduction possible, or recompense for the obsolescence, successful efforts to improve the service will prove extremely disadvantageous to it. * * *" The cause was remanded to the lower court for further proceedings.

WIDOW OF BENEFACTOR OF COL. DRAKE DIES

TITUSVILLE, Pa., July 19.—Mrs. R. D. Fletcher, widow of the late R. D. Fletcher, who befriended Col. E. L. Drake and aided in making possible the drilling of the first oil well, died at the city hospital here.

Mrs. Fletcher fell and broke her hip on May 28, but it was thought she was recovering. She was born at Erie, October 24, 1837, the daughter of Judge Edward H. Chase, who was the son of Rev. Amos Chase, the first Presbyterian minister of Titusville. Her mother was Sarah A. Titus, the daughter of Jonathan Titus, founder of Titusville.

WEBSTER PARISH GASSER

SHREVEPORT, La., July 19.—Ohio Oil Co.'s No. 1 Crichton, in Webster Parish was completed as a 40,000,000-foot gasser at 2,541 feet, 11 feet in the sand. Showing of oil developed while bailing out the casing preparatory to setting liner for a test, but did not materialize beyond the ordinary light mist or spray characteristic of prediscovery wells in the Cotton Valley area.

While the well failed to materialize on hopes of extending the proven oil area to the southwest, it is important in that it is as high or higher on structure than any other well in the Cotton Valley district.

MONTANA GASSER PIPED

CHINOOK, Mont., July 18.—The California Co. is rigging up preparatory to resuming drilling on Bowes Dome, where its rig was destroyed by fire several weeks ago. The gas, measuring 14,500,000 feet per day, is being piped off some distance from the rig, and is under control, precluding the possibility of further accidents. The flow was measured by E. J. Hubbard, of Billings.

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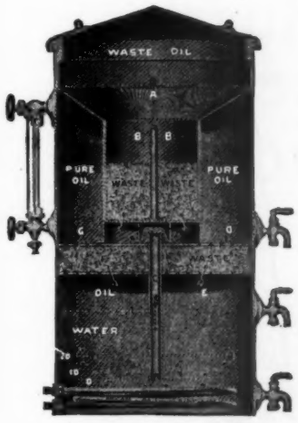

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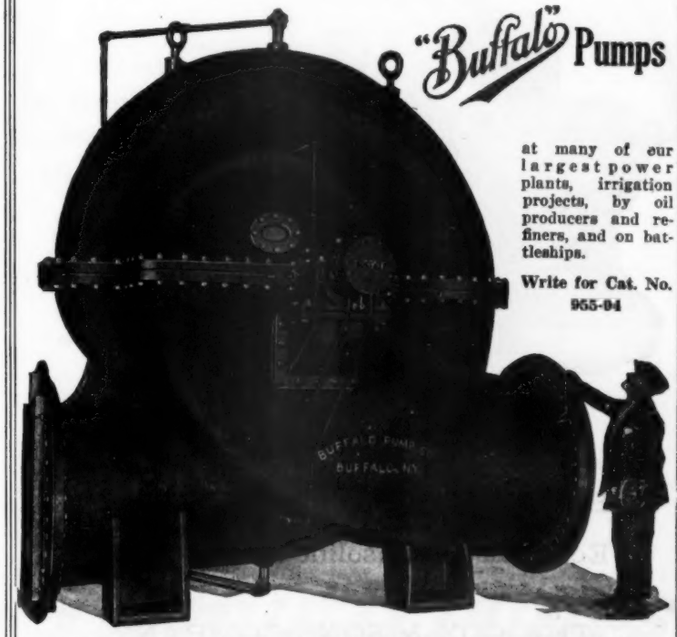

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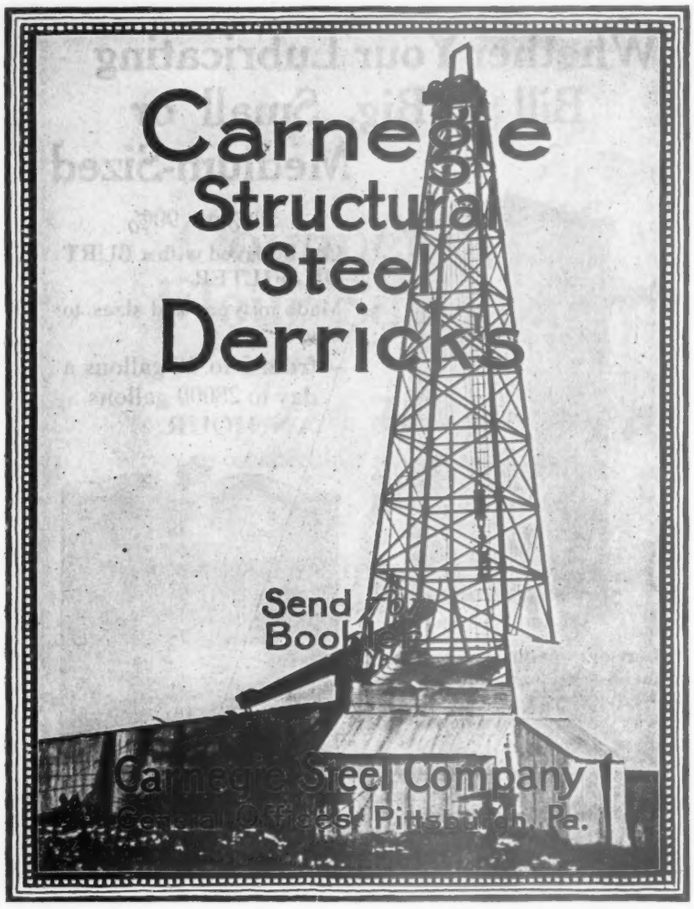

Coldwater Field of Mercer County, Ohio, Attracts Attention

By Whit

COLDWATER, Ohio, July 21.—The Coldwater Field of Butler Township, Mercer County, in the western section of the old Lima Field, in northwestern Ohio is just now attracting some attention, and the prospects are for an active drilling campaign, unless the price of crude goes to such a point that development work will be unprofitable.

The wildcat well drilled by Courtney Combs of Greenville, Ohio, on the William Wiley farm, Section 19, came in doing 34 bbls. and about 75,000 feet of gas. Combs sold out to the Carter Oil Co. The Carter Co. drilled No. 2 Wiley for a production of 20 bbls. This company has also drilled in a good gas well on the Catherine Fetzer farm, same section.

George Lacknett of Pittsburgh has drilled in a good gas well on the Catherine Fetzer farm, same section.

George Lacknett of Pittsburgh has drilled in six gas wells showing from 100,000 to 750,000 feet and No. 7, completed a few days ago, is making 20 bbls. of oil and about 750,000 feet of gas. All the gas wells carry a normal rock pressure of 33.6 pounds to the depth of 100 feet. This insures long life to the wells.

The surprise well of the new field was the O. J. McCregan in his No. 1 on the Joe Wemning farm, Section 21, which came in doing 1,000,000 feet of gas and sprayed oil the first day, and then filled two tanks. The well was shut in to await the pipe line connection. No. 2, on the same farm, came in at 2,000,000 feet of gas and 40 bbls. of oil and was shut in, but blew the casing and drive pipe out of the well and flowed over the mast.

Courtney Combs' No. 1 on the Charles Stukenbury farm, Section 20, came in doing 275,000 feet of gas and proves a big area, being 1½ miles from the field proper. This confirms the belief of various oil men that a real field will be developed. Defenbaugh Brothers have completed five wells, all good producers. Their last completion several days ago was a gas well with a volume of 300,000 feet. They have three wells on the C. Ables farm, and two on the H. Wenning farm.

The Coldwater Oil & Gas Co. has drilled three wells on the Solomon farm, in Section 6, which furnish gas for the town of Coldwater, and make a lot of oil, but owing to the lack of pipe line connections, it has not produced these wells steadily, so no accurate figure can be obtained as to what they will do. The same company has three wells on the Herman Fortcamp farm, Section 9, also piped to Coldwater. An old well on the C. Wenning drilled a few years ago and plugged, was recently cleaned out and cased, and now furnishes gas for the Coldwater Co.

O. J. Davidson has made a location on the above lease and will move on a machine at once. Davidson was one of the operators in the Shiloh Field, in Richland County, north of Mansfield. He had four machines at work there and expects to see a lot of action on his lease.

Courtney Combs has made a location on the Carolina Neiberling, Section 20, the first location he has made in proven fields. This well will offset his Stubenbury well. He had up to this time confined his work to wildcatting and has met with success.

H. C. Craft, of Indianapolis, has cased his No. 1 Joe Able, Section 6, Butler Township. R. E. Young has made a location on the John Dues, Section 7. O. J. McGregan, is drilling his No. 1 H. Wenker, Section 31. This well blew the tools out from the depth of 580 feet, and the stem as high as the mast, then in its downward descent struck the derrick floor, wrecking the machine and burying the stem in the ground.

A ready market is assured for the Coldwater Field, for both oil and gas as George Lacknett has laid a 6-inch gas line to Celina, Ohio, connecting to the Lima Gas Co.'s line, and this line is

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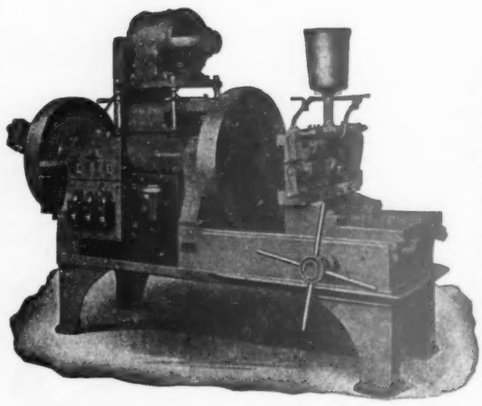

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now nearing completion. The Buckeye Pipe Line Co. has started to lay an oil line from the field to Celina, making a ready outlet for the crude production. There have been 25 wells completed in the Butler Township, area of Mercer County, and no dry holes.

DEVELOPMENT OF FUEL VARIES WITH NATIONS

In comparing the trend of progress in fuels and fuel technology in the principal countries of the world, it is apparent, says Industrial and Engineering Chemistry, that the problems selected for investigation are determined by the requirements of national defense and economic necessity. In the United States, with excellent fuel but with high labor costs and low priced European competition, much attention has been directed to the production of cheap and abundant power by the erection and interlocking of large central power stations into great superpower systems, and by the attainment of high boiler efficiencies through the use of powdered coal. In England, with its smoke problem caused partly by the use of soft coal in open domestic grates, and with its necessity for the use of the Navy, attention has turned to the low temperature carbonization of coal which gives a smokeless semicoke for use in grates and at the same time a large yield of liquid fuel.

On the other hand, the safety of France lies in adequate land defense requiring great quantities of lighter motor fuel for automobile and aviation engines. Owing to a lack of petroleum, other methods of supply are needed and her great tropical possessions naturally suggest vegetable sources for this fuel; therefore, in France several different investigations are in progress along this line. Germany is also short of oil, but owing to her recent loss of high grade coal fields this latter shortage is more pressing at present; hence in Germany, important studies in the use of low grade fuels and in the more rational chemical utilization of all kinds of fuels are now being carried out.

WORLD WIDE SURVEY OF OIL SITUATION

One of the most significant developments in oil in many years, says the Wall Street Journal, is the placing of an order for 40,000 tons of oil pipe by the International Petroleum Co. This pipe is to be laid from the company's producing fields in Colombia to tidewater. This indicates that Standard Oil of New Jersey, which owns International Petroleum, sees the necessity of bringing out South American oil to meet demand. It is also regarded as representing the Standard Oil opinion that production in the United States is going to show a substantial falling off in the next several months. Despite uncertainty in the Mid-Continent, the oil situation is showing world-wide improvement. Demand from Europe is better and conditions in California are losing their disturbing effect. Consumption of crude oil is running about 10 per cent ahead of a year ago, and at that ratio we will require 2,300,000 bbls. of oil daily in August. This is substantially in excess of production in this country, which is about 2,000,000 bbls. a day. Imports are running at the rate of 225,000 bbls. a day, so that over the next several weeks stocks should be drawn on to the extent of 75,000 to 100,000 bbls. a day.

U. S. MACHINERY FOR ALSACE

Arrangements have been concluded by the company operating the petroleum fields near Pechelbronn, Bas-Rhin, for the purchase and installation of a quantity of improved drilling machinery from the United States. It is expected that these installations will materially increase the output of the fields, which now amounts to approximately 70,000 tons annually.

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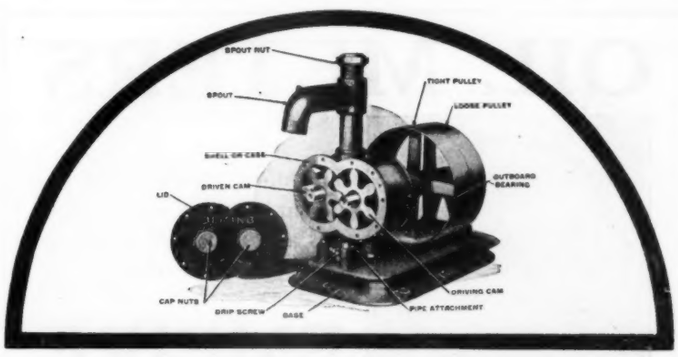

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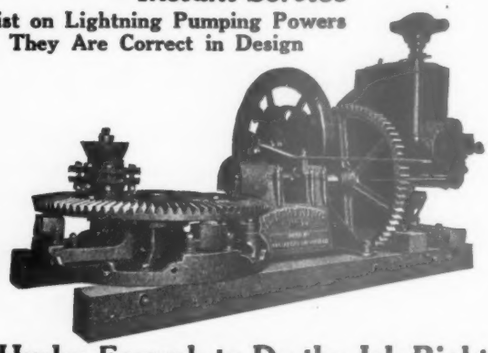

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Red River Awards Are Recommended by General Land Office

WASHINGTON, D. C., July 19.—The General Land Office has recommended to the Interior Department initial awards in 36 of the 178 long pending claims filed on lands in the Red River oil district bordering Oklahoma and Texas, jurisdiction over which was passed to the department by the Supreme Court June 30. Only two of the 36 claims adjudicated were undisputed and conflicting claims were filed in all but 16 cases. Claims rejected totaled 142.

All claimants, whose applications were rejected, may appeal to the Secretary of the Interior before August 31. They must serve notice of appeal on all other contending claimants, the latter being given until September 15 to reply. The question of oral hearings will be decided after the cases have been appealed and replies made.

The Land Office Commissioner's recommendations, a department announcement said, do not bind the Government to issue oil leases to the applicants, granted awards, but merely settle the question of land rights between the rival claimants. Neither do they affect the funds derived from oil operations in the Red River district which were recently transferred to the Secretary of the Interior by the Supreme Court. These funds will be held pending a decision on their final disposition.

Claims filed from four States and the District of Columbia, are covered in the awards as follows:

Colorado.—Ben Bergeman, trustee, Pueblo, three claims; Pacific-Wyoming Oil Co., Denver, three claims; D. V. Burrell and others and National Exploration Co., Denver; D. V. Burrell and others, and Red River Oil Co., Denver; Carl C. Staley and others, and National Exploration Co.; J. L. Ellsworth and others, and National Exploration Co.; F. A. Pine and others, Denver.

Indiana.—Burke Divide Oil Co., Terre Haute, three claims, including Belle Isle, Judsonia, and Mary Isle.

Oklahoma.—A. A. A-1 Placer Mining Association, Oklahoma City, A. A. B. A. Placer Mining Association, Oklahoma City; Pearl A. Little and others, Oklahoma City; Lemon Placer Mining Association, Frederick; Clyde Cowen and others, Oklahoma City; A. C. Kendrick and others, Oklahoma City; John T. Smith and others, Oklahoma City; T. E. Kendrick and others, Oklahoma City; one claim of H. L. Roberts, H. R. King, R. E. Litton, J. L. Meeks and M. B. Pickens, Frederick; Nathan Ulrich and others, Oklahoma City; A. E. Pearson and others, and Silver Moon Oil Co., Oklahoma City, two claims.

Texas.—Melish Consolidated Placer Mining Association, Wichita Falls, two claims (Luck Spot and Black Jack); Melville E. Peter, James M. Patterson and William G. Trigg, Wichita Falls, one claim; M. N. Addison and others, Wichita Falls; McKinley A. Testerman and others, Wichita Falls; James M. Patterson and William G. Trigg, Wichita Falls, one claim; James M. Patterson and Melville E. Peter, Wichita Falls, one claim; Melish Consolidated Placer Mining Co., one claim, (border line) Delta Oil Co., Ewing Claggett, receiver, Wichita Falls.

District of Columbia.—Darius V. Dyke and others.

SHALLOW GAS WELL

SHREVEPORT, La., July 19.—What is believed to be the shallowest gas well ever brought in in Shreveport territory was uncovered in De Soto Parish at 97 feet on the Pollock lease, by Freeman & Coleman, drilling for the Greyhound Oil Syndicate, of Bristow, Okla. The well is midway between the Benson gassers in De Soto and the old Spider oil area. The well will be used for fuel in drilling another test, it is reported, and is good for approximately 3,000,000 feet of gas daily.

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It will contain a complete survey of the Industry's activities during the first six months of this year.

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GOVERNMENT ENTERS FIELD OF PRODUCTION

FORT WORTH, Tex., July 19.—With the declaration that the Federal receivership on the Red River oil field in litigation for four years, was ended, as of June 30, the Supreme Court put the United States in the oil business.

This is the first time in the history of the oil fields that an oil property has been actually operated by the Government, and is without precedent, except for the operation of some Alaskan coal mines during the construction of the Government railroad. Only once before has the highest judicial body operated a business and that was during the Civil War times, the property being a small railroad.

Frederick A. Delano, Federal receiver for four years, last week formally tendered control of the river bed wells, 34 in number, declared to be United States property, to H. W. MacFarren, representative of the Bureau of Mines, Department of the Interior from Washington, D. C., and H. B. Hill, deputy supervisor of the Bureau of Mines, from the Dallas office. The receiver's operating force was taken in charge by the Bureau of Mines representatives, and the business of production will be continued uninterrupted, until the ownership of the wells is decided.

WILL MANAGE NOWATA COUNTY GAS COMPANY

M. A. McHenry, until recently manager of The Texas Distributing Co., Mineral Wells, Texas, has been appointed manager of the Nowata County Gas Co. Russell Faulkner, manager of the property since a short time prior to its acquisition by the Empire Companies, will continue as superintendent of operations. This division of work is made necessary by the scattered nature of the gas distribution system and the centralization of the accounting for the Chelsea and Beggs gas distribution properties, in addition to that of the Nowata and Delaware properties.

Prior to his five years' service as manager of the Texas company, Mr. McHenry was engaged with Doherty gas properties in Ohio. He first came to the organization through the sale of the Pueblo Gas & Fuel Co. Several years were spent in the service of the Galveston Gas Co., Lindsay Light Co., Chicago, and the South California Gas Co., at Los Angeles.

BIG GAS EXPLOSION AT SIGNAL HILL WELL

LONG BEACH, Cal., July 19.—A gas explosion destroyed the derrick of the W. H. Fisher Oil Co.'s No. 7 well at Signal Hill, spreading fire, which threatens to devastate other derricks in the vicinity.

Two derricks have been raised, No. 7 Larie, and the No. 7 Evans. A Union Oil Co. storage tank containing 55,000 bbls. of oil was directly in the path of the flames. The damage is estimated at more than $300,000.

A 1,500-bbl. tank of the Fisher company near the well at which the fire started, exploded soon after the two derricks were destroyed. A larger tank of the same company was endangered.

CHILE KEROSENE AND GASOLINE

Imports of kerosene and gasoline into Santiago, Chile, during March and April were limited to isolated shipments for small buyers, both the Anglo-Mexican Co. and an American company selling from stocks already on hand. Sales for April in the Santiago district, the only one in which recent information is available, improved over March. The increasing number of automobiles and trucks in the city has raised the consumption of gasoline about 10 per cent. Kerosene sales are up to about 5 per cent. The increase of gross sales for the first quarter of 1924 over 1923 amounts to about 30 per cent.

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Larkin Improved Sand Pump

(PATENTED)

This illustration is the famous Larkin Sand Pump which is found in every oil field throughout the world.

Besides a full line of Drilling and Fishing Tools and Packers of all kinds and sizes, we manufacture the LARKIN Patent Never Slip Pipe Grip, which does away with the old-fashioned way of putting in casing with rope and tongs, and is less expensive, more durable and more easily handled.

LARKIN & CO.

Butler, Pa., U. S. A.

OIL PRODUCER TELLS IOWANS STORY OF OIL

(Continued from Page 121)

it. Money would not purchase such a right-of-way today. This line was abandoned some years ago.

Gasoline From Natural Gas

"There was recovered last year by compression and absorption plants more than 700,000,000 gallons of gasoline from natural gas in the various oil fields of the country. This industry is not more than a dozen years old and today there are more than a thousand of what is known as casing head gasoline plants. Casing head gasoline was first marketed commercially in West Virginia in 1903, but the big development has been in the past decade. Natural gas is divided into what is known as wet and dry gas, depending on whether it carries gasoline in commercial quantities. In one of the Oklahoma fields as high as 6 gallons of gasoline is recovered from 1,000 feet of natural gas. In the Salt Creek Field in Wyoming the average is around 4 gallons to the 1,000 feet. This raw gasoline is blended with naphtha and tamed down so that it can be used in motor cars. In its raw state it is very light and 'wild.' Once all this valuable casinghead gasoline was allowed to blow wild in the air in the form of vapor. The major oil companies all have staffs of highly paid chemists who are continually working out plans to increase the number of by-products of crude oil and to utilize everything of value in natural gas. After the gasoline is extracted from natural gas there is left a cleaner fuel and a loss of only some 6 per cent in heat units.

Service to the Public

"In no country in the world does the service rendered to the motoring public compare to that in the United States. A year or two ago there was great excitement in London when the first curb pumps were introduced and the filling station as the American motorists knows it is unknown in other countries. The modern filling station with rest room, telephone and other refinements is a strictly American development. The big oil companies make only a small margin of profit per gallon and depend entirely on volume for their profits. There are those who believe that service to the public has gone too far, and that the big investments in filling stations are not justified. Time only can settle that. The bulk of the oil business of the country is no longer in the control of the so-called Standard Oil group. There are many independent oil companies of great strength, several of them with a capital exceeding $100.000,000, and many with a capital exceeding $50.000,000. And since 1911, when the Standard Oil Co. was dissolved, the separate companies have been striving with might and main to outdo each other, so today there is as keen rivalry between the units of the so-called Standard Oil group as there is between the so-called independent group and Standard. The officers of each company of both groups are out to make the very best possible showing for their individual company without regard to any grouping. That is one reason why the public is receiving so much free service along with a purchase of gasoline or lubricants.

Large Stocks in Storage

"There are in storage today around 470,000,000 bbls. of crude oil and refined products, equal to about an eight months' supply. Last year was a most disastrous year for the oil industry, owing to big deep sand fields developed in Los Angeles Basin in California and several major fields in Oklahoma and Texas, the production reaching the highest point in the world's history. Not only was there a flood of oil in California, but the mile deep sands poured out oil of high grade, rich in gasoline. A great fleet of tankers carried this cheap oil to Atlantic Seaboard refineries, shutting off the natural market for crude oil from the Mid-Continent Field. And California gasoline flooded the Eastern market via the Panama Canal. One tanker carried a cargo of gasoline that filled a string of tank cars 5 miles in length. And it was good and sweet gasoline, too, and the public

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Your dealer carries in stock the following HOUGH products: Cold Drawn Seamless Steel Working Barrels, Working Barrel Valves of Regular and Special types, Working Barrel Valve parts, Steelex and Bronzex Balls and Seats and many other items.

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Patent

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Just now we are equipped to supply vertical and horizontal storage tanks in practically every desired small, medium and large size, up to 30,000 gallons.

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liked it. The result was a piling up of gasoline at refineries in Kansas, Oklahoma, Texas and other interior points, and the throwing on the market of great quantities of 'distress' gasoline that was sold at much less than cost by refiners with their backs to the wall for ready money. The outcome was cutting off and reduction of dividends by many of the major oil companies and run for the producer and refiner with weak financial backing. The largest producing company in the Eastern fields had a carmine colored balance in excess of $1,000,000. About the first of the year the oil boom in California had subsided and production and consumption on the Pacific Coast were about even, but there was still a great stock of crude oil in storage. Early this year the oil situation looked very bright and crude prices were advanced materially in all the fields. Then followed increased production in many of the older fields and a cold and rainy spring with low gasoline consumption. This was country-wide, and the first 10 days in June was not much better than April and May. The oil industry is now hoping for a hot July, August and September to even up the score.

Cheapest Thing in the World

"Gasoline at 20 cents a gallon, the average price throughout the country, is the cheapest commodity in the world. The motorist goes into a hotel or restaurant and buys a bottle of mineral water at the rate of $84 a barrel and thinks nothing of it. This water flows from a spring in Maine or Wisconsin, made ready for the market in Nature's own laboratory. All that is necessary is to bottle, advertise and market it. No evaporation, no wastage; good this year or five years hence. The oil man drills a well to a depth of from 2,000 to 5,000 feet at a cost of from $15,000 to $100,000, after vast sums have been expended in locating that particular oil field. If he gets a paying well the oil is piped to a refinery, sometimes hundreds of miles away; the oil is refined and gasoline carried in tank cars possibly some hundreds of miles to a filling station. Then it is measured out to the customer with free air, free water and other real service at a cost of $8.40 a barrel. That barrel of gasoline will transport five people from 590 to 1,100 miles, depending on the make of car, an average cost slightly in excess of 1 cent per mile. The average gasoline consumption for the entire country last year was figured at 396 gallons or 9½ bbls., which at an average price of 20 cents would be slightly under $80 a year for your gasoline bill. Gasoline in Des Moines, I observe, is retailing today at less than 3 cents a pound.

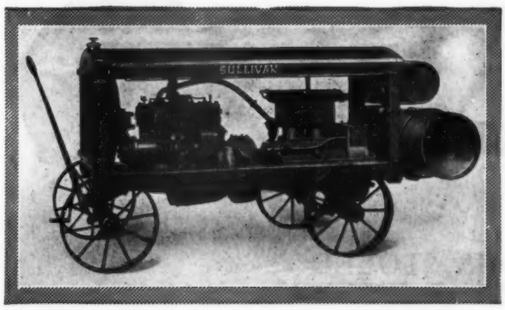
Mile High Gasoline Sold

"More than 30 per cent of the gasoline sold in Des Moines comes down from the Wyoming refineries, some 900 miles distant. I say down, for the reason that the refineries and oil wells of Wyoming are located from 5,000 to 7,000 feet above sea level, nearer the sky line than any other refineries or wells in the world. And Des Moines, as you know, is only 861 feet above the sea. The balance of the gasoline sold in Des Moines comes from Oklahoma and Kansas. There were in Des Moines on the first day of this year 27,417 motor vehicles. The country-wide increase last year was 24 per cent, so it is safe to assume that by the end of this year, Des Moines will have in excess of 33,000 motor vehicles. The service stations in Des Moines compare favorably with those of any city in the country. More than 600 persons are employed in gasoline distribution in this city.

Oil Industry Settles Labor Problem

"Few people realize, especially those living away from the oil producing and refining areas, and they are greatly in the majority, that the oil industry is the second in value of products in this country, and the only industry that appears to have no labor problem. Nearly every major oil company provides for its employes life insurance, old age pensions and profit-sharing plans that weld their army of employes into a contented, prosperous and happy family, thus reducing labor turn-over to a minimum. Many companies have employes from

AIR POWER ON WHEELS



A New Sullivan 103-Ft Portable Compressor

This new Sullivan portable compressor meets the popular demand for a 100-ft. unit for many oil field jobs.

Try it for running Sullivan Rock Drills, for tank or building construction, concrete busting, operating portable hoists, sand blasting, paint spraying, etc. Its compactness and reliability will stand you in good stead.

A larger, 170 ft. gas engine driven compressor is also built, also a 121 ft. unit run from a Fordson.

Type—WK-311.
Displacement—103 cu. ft.
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Weight—3,435 lbs.
Drive—Buda 4 cyl. 4 cyc. engine.
Mountings—Steel wheel, rubber tire wheels, trailer, or skid.
Ground area—9½x4½ ft.
New Bulletin, 1577-L.

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The Man who picks things up and lays them down, to do some other time, loses money.

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The tool that works hard and cuts ragged, that wastes your time and spoils your temper, loses you money.

The tool that does the job at once, without delay, without bucking or breaking, makes you money.

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are for plumbers who want to do **twice the business**, not the business twice.

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Go into any shop that is doing twice the business it was a few years ago and you will find they use NYE DIES and TOOLS.

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FOR THREADING 2", 2½", 3" TUBING

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It is strongly built and positive in operation. It weighs but 39 lbs. and for a direct operating tool cuts threads with remarkable ease. It is equipped with ratchet which permits operation in close quarters and is just the tool oil well operators need for this work.

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each department of the business meet with the directors at stated intervals and freely discuss any desired change in working conditions, changes in schedule or other matters of interest. These representatives are elected by their fellow workers in the department by secret ballot, and no officer or executive of the company is eligible. The plan keeps the directors in close touch with the employes and makes for mutual respect and good feeling. It is a practical application of the saying of the old Chinese philosopher: 'When men meet face to face their differences vanish.'

"The profit-sharing plan of the major oil companies, as a rule, is developed through stock ownership by employes. Two of the great oil companies operating in Des Moines that follow this plan are The Texas Co. and Standard Oil of Indiana. The latter company has 27,000 employes and is the largest distributor of gasoline in the world. This company has 250 employes in the city of Des Moines and 95 per cent of them are stockholders in the company. After one year of service employes become eligible to purchase stock. For every dollar contributed to the purchase of stock by the employe the Indiana company treasury contributes 50 cents as a free gift. Employes are allowed to purchase stock each year on this plan up to 20 per cent of their salaries. Interest is charged on deferred payments and dividends credited. The price of the stock is based on the market price over a period of several months. If for any reason the employe should leave the service of the company before the stock he has subscribed for is paid for, liberal provision is made for the contingency. The application of the profit-sharing plan by the different major oil companies may differ slightly in its application, but the net results are the same.

What of the Future Oil?

"Every few months the newspapers print a prediction by some eminent statistician who proves that our oil reserves will be exhausted within 20 years. I have been reading these predictions regularly for 25 years, yet today there is more oil in sight than ever before in the world's history. True, consumption is increasing by leaps and bounds, but so far the oil man has kept ahead of the hounds and the motorist, no matter in what part of the country he drives up to a filling station, he has never found one that was not ready to supply his wants. Within the past dozen years oil has been found in nearly every part of the world. There are rich fields in Persia, in Borneo, in Japan, South America; Mexico will continue to produce vast quantities of oil; England has a flowing oil well; there are several productive oil fields on the continent of Europe; oil has been found within the Arctic Circle. Russia, a great oil producer in the past, will again become a big factor; oil prospecting is going on in Africa, Egypt, India, Australia, Spain, Italy and other parts of the world. Some day oil will be found all the way from Alaska to Patagonia. The American oil man is not only active in his own country but in the far corners of the earth. American oil well drilling machinery and equipment leads the world. When the oil sand wells of the United States shall have been drained some generations hence, as I see it, we can turn to the great shale mountains of Wyoming, Colorado and Utah, which contain billions of barrels of recoverable oil of fine quality. These shale mountains are our last great reserve and will remain as such until the price of crude has mounted sufficiently to make the recovery of oil from shale a profitable commercial undertaking. It will be a far day when the oil reserves of the United States are exhausted."

NEW PETROLEUM RESERVATION

A Government decree dated May 26 reserves the petroleum lands of "the coastal zone of the Department of Piura and the littoral Province of Tumbes" for governmental exploitation under Article 12 of Law No. 4452. The reserved territory includes land covered by the ocean in addition to the strip of shore.

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Pulling Machine

MAXIMUM STRENGTH
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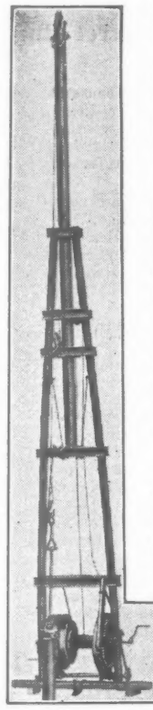
DOUBLE OR SINGLE BRAKE



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BRITISH DIRECTORS OF LAGO PETROLEUM

Lord Inverforth and Sir James T. Currie have been elected directors of the Lago Petroleum Corp. Sir James has also been elected a member of the executive board. He is the managing director of the Mexican Petroleum Co., in which Pan-American Petroleum had a 50 per cent interest. Lord Inverforth is one of the largest ship owners and operators in England. Sir James Currie has sailed for England to continue arrangements between British Mexican Petroleum and Lago Petroleum. British Mexican already owns a substantial interest in Lago Petroleum.

The Lago Oil & Transport Co. is being incorporated in Canada, with a capitalization of $2,500,000 8 per cent preferred stock, no par value. This company will be owned by the Lago Petroleum Corp. and British Mexican. Lago Oil & Transport Co. has bought in England four lake tankers with an aggregate capacity of 60,000 bbls.

At La Rosa, on Lake Maracaibo, a terminal is nearing completion. This is close to the company's producing wells, and three 55,000-bbl. tanks will be ready on August 1. Contracts have been signed for two additional lake tankers having a capacity of 25,000 bbls. each.

Beginning September 1 Lago Petroleum will sell 25,000 bbls. of oil a day to the British-Mexican under contract.

KANSAS GOVERNOR ASKS INVESTIGATION

TOPEKA, Kans., July 19.—Governor Davis has sent another letter to the State Attorney General directing him to investigate the gasoline prices in Kansas. The Governor has maintained quite a regular correspondence with the Attorney General for months on this subject.

The Attorney General conducted an extensive investigation last fall. The information gathered was submitted to Government officials and part of it is the basis upon which the Federal suit against the big oil companies was brought.

The Governor asserted he had been advised at some points in the State gasoline was selling at 20 cents a gallon, while at nearby points it was selling below 14 cents a gallon from wagons and below 16 cents at filling stations. The Governor expressed a belief investigation would show some violations of the anti-trust laws.

PETROLEUM FROM COAL

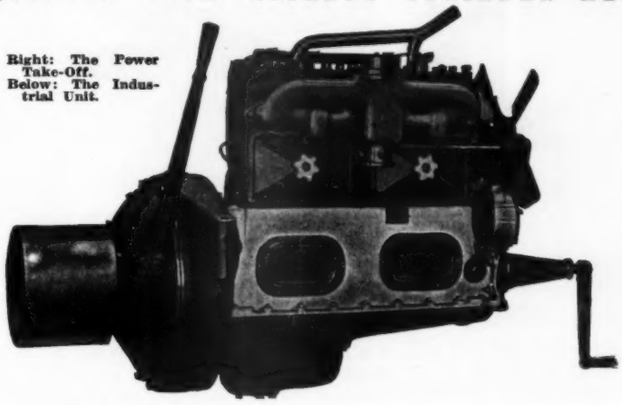
The extraction of petroleum from coal by the low temperature carbonization process is the object of the installation of a plant at Nottingham, England, consular advices to the Department of Commerce state. The promoters expect to make Nottingham a smokeless city (the first in England) to furnish cheap gas and to reduce both waste and danger in the coal mines in addition to securing from 18,000 to 20,000 gallons of oil from every thousand tons of coal, which is the expected daily capacity of the plant. Under present circumstances England imports oil to the value of £50,000,000 a year. It is proposed to replace this supply as far as possible with the gasoline and other petroleum products which are to be separated from the small coal heretofore regarded as almost a waste product of the mines.

PHILIPPINE TEST NOT FINAL

Commenting on the abandonment of the prospecting operations on Bondoc Peninsula, Island of Luzon, of the Philippine group, which were conducted by the Standard Oil Co. (California), an article in the "Standard Oil Bulletin" states that the failure to find oil at Bondoc does not prove that there is no oil in "the islands." There is oil to the north, in Japan, and to the south, in Borneo, and it may yet be found in the Philippine group, where there has been only one real drilling campaign, the one just finished.

EQUIPPED WITH RICARDO CYLINDER HEAD

Right: The Power Take-Off.
Below: The Industrial Unit.



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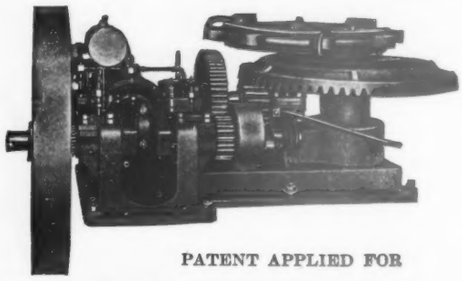
THE LUNKENHEIMER CO.



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NO LOAN TO MEXICO BY AMERICAN OIL MEN

NEW YORK, July 19.—Denying the suggestion contained in a dispatch from Mexico City that a loan by American oil interests to the Mexican Government may be made in settlement of oil matters in dispute, Guy Stevens, director of the Association of Producers of Petroleum in Mexico, makes the following statement:

"No proposal under which legal privileges would be granted to the petroleum companies in exchange for a loan, has been made either by the Mexican Government to the oil companies or by the oil companies to the Mexican Government.

"Moreover, it is my understanding that President Teagle, who is mentioned as one of the oil men who will visit Mexico this month, is at present in Europe.

"The oil companies would of course welcome any disposition on the part of the Mexican Government which would remove existing obstacles and lend the necessary encouragement to the waning industry in Mexico; and the natural result of any such dispositions, in the exact degree in which they contribute in a practical and effective way to a rehabilitation of the industry, would be to ameliorate the financial situation. Such amelioration, however, would not come through a loan to the Mexican Government, but through the investment of new capital in effort to check the progressive decline in production and bring in new fields, which if successful, would materially increase the chief revenue of the Government and do much toward enabling it effectively to balance its budget."

STOCKHOLM'S GASOLINE STOCK HEAVILY TAXED

Two and a half million gallons of gasoline at present in stock in the city of Stockholm have become subject to tax under the new law just passed by the Swedish Riksdag fixing an import duty of about 5⅓ cents per gallon and will net the Government a substantial sum.

The duty from now on will be retroactive and applied to existing stocks by a special provision of the Riksdag in order to prevent the individual dealer from reaping an excessive profit from the sudden rise in prices. However, it affects only those dealers who had stocks of 250 gallons or more.

The new duty is primarily intended to favor Sweden's native motor fuel, including shale oil and sulphite alcohol. The commercial interest in sulphite alcohol received a sudden impetus recently, owing to successful tests in which a car of Swedish make consuming sulphite alcohol won a race with an American car consuming gasoline. This alcohol is a by-product of the chemical wood pulp mills in Sweden, whose annual output of 100 per cent alcohol is estimated at 52,800,000 gallons.

Sweden's imports of gasoline last year amounted to 86,150 tons, an increase of about 50 per cent over the previous year.

DIESEL DRIVE SHIPS

The only hope for ultimate success in the conversion of shipping board or privately owned vessels from steam to Diesel drive, lies in the adoption of the two-cycle double acting type of engines, in the opinion of Henry R. Sutphen, vice president of the Submarine Boat Corp. The chief advantage of this type of internal combustion engine, he states, is that it produces the required power with less weight of machinery than the other types and, therefore, reduces the initial cost.

OIL REPORT SECRET

WASHINGTON, D. C., July 19.—Inquiry at the Federal Trade Commission developed the information that the commission, under no circumstances, would reveal its findings in its recent investigation of price cutting by Standard and other companies. Publication will rest with the president to whom the report was made.

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Central West Work In Last Half of 1924 To Depend on Prices

By Whit

TOLEDO, Ohio, July 21.—In a general survey of the Central West Field, comprising Illinois, Indiana, Northwestern Ohio, (Lima Field) Central Ohio, Kentucky, Tennessee, Alabama, Mississippi, Georgia, Florida and Michigan. It looks very much as though the last half of 1924 will show a big drop in development work when the year closes and the figures are compiled, if the talk of operators is any criterion. Some fields will maintain new work to quite an extent, while others will almost drop out of the oil column. With a low market for crude, word comes from Illinois that little new work can be expected, even in the shallow sands, and what will be done in the stray sand field of Martinsville Township, Clark County, where the pays of note are found at close to 1,500 feet, and the Wabash County Field, which is a spotted field at its best, and the sands vary around 1,600 to 1,800 feet, remains to be seen when the present drilling wells and those contracted for are completed. Much depends also on the price of oil, for should it go much lower the tools will be hung up for an indefinite period. Little wildcatting can be looked for in Illinois, although there are many sections yet to test out that look inviting, with a favorable price for crude.

Southwestern Indiana (the Princeton area) can be figured as is the Illinois Field, being just across the Wabash River from the Illinois Field. The old Trenton area of the eastern central portion of the State, will experience little work, even in the productive Hotmier Pool, in Jay County and in Pike Township, along the Randolph County line. This is the most productive section of the State, and excellent wells are brought in that can be relied upon to show a profit for the operator when oil is around the $2 mark, but when much below that the operator believes in leaving the oil in the ground.

The old Lima Field of northwestern Ohio is still in the memory of the old timers that sold crude as low as 15 cents a barrel, but in those days gusher wells were found and in most instances brought the operator out ahead of the game. More money was made in the Lima Field when oil was around the dollar mark than ever since, for it was in those days that the famous Trenton Rock was virgin, while today the wells are small and oil cannot be produced at a profit below $2 and even at that it leaves little margin for the investor on account of the price of materials and labor. There is one thing about the oil field and that is the fact that wells will be drilled regardless of crude price, more for a habit than for a profit. This means that development work will be maintained so long as commercial wells can be found. The new additions to the producing area, the first half of the year 1924, will no doubt be further tested. These fields are the Payne Field, in Paulding County, north of the old field, the Shelby County Field, to the south, as well as the Hardin County Field, also in a southward direction.

Central Ohio Field will see the usual work done by the gas companies as the price of crude cuts no figure in the gas end. The deep Clinton sand fields are an expensive field to develop for oil and more attention will be paid by oil operators in the shallow Berea sands, encountered most anywhere from Lake Erie on the north, to the Ohio River on the south.

Eastern Kentucky operators announce that little work will be done, especially in the Big Sandy area in the extreme eastern part, and the same applies to the central portion in Lee, Estill, Powell, Wayne and other counties.

Mississippi, Tennessee, Alabama, Georgia and Florida are going along slowly and most of the wells are shut down in these States for the lack of ready money to complete them or held up for other purposes.

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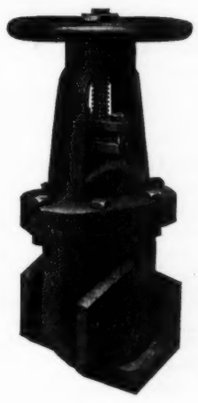
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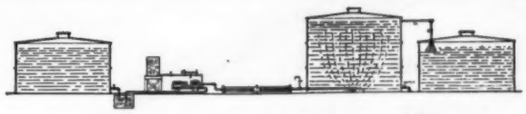
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Use of Motor Busses Spreads Over World Increasing Oil Shale

Rapid expansion of motor bus transportation is taking place throughout the world, increasing the demand for gasoline. China, Algiers, Spain, France and Holland, have turned to the bus as a means of curing traffic deficiencies, the bus rendering economic service in the cities and serving to aid the railroads in handling traffic over long distances.

London continues to hold first place in the development of bus transport, and the New York system of buses was patterned largely after the London company. This system of transport has been carried to Chicago, to Detroit and to St. Louis, with results said to be highly satisfactory. Under the plan recently announced for the merger of New York and Chicago bus companies, it is contemplated to nationalize bus operation, to use the two largest cities of the country as a nucleus and around them to build up a chain of bus systems operating in the larger cities east of the Mississippi and eventually to weave into this system bus lines in the smaller cities.

The evolution of the motor bus as a means of transportation has followed two bents, one of providing competition in city limits proper to surface railway systems, and the other of providing competition in rural districts with the railroads. The part that the Fifth Avenue System in New York has played in moving traffic uptown and downtown is held to illustrate the important role that bus operation plays in the cities. The fight that the New York, New Haven & Hartford Railroad Co. encountered a few years ago in meeting the inroads of New York to Boston motor competition is held to illustrate the other side of the development.

After strong opposition at the start the railroad companies have come around to the view that it is better to employ the motor bus as an auxiliary service in handling short hauls than to fight it. In Ohio, this method has been worked out with particular success. After losing heavily in traffic, some of the short line railroad of that State went into the bus business, purchasing up-to-date equipment and endeavoring with good success to lure back to the railroad-owned busses some of the traffic that had been deflected. In the cities, this union of bus and surface railway has been hampered, although a close approach to it was effected in the case of the Public Service Corp. of New Jersey, which is now buying up bus lines running from the cities into suburban districts and has organized a new subsidiary to handle bus operation, this subsidiary working in close harmony with the electric railway subsidiary.

Several months ago a far-sighted Dutchman hit upon the idea of opening up a bus service in Holland and now the entire country has been covered with a network of lines that include not only intercity services but intracity as well.

The development spread to Belgium. France was farther along in bus operation, boasting one long bus route, from Nice to Grenoble, Evian les Bains, Geneva Besancon, Belfort and Mulhouse, the length totaling 375 miles.

Barcelona and Cadiz recently turned to the bus, and now it is quite usual to see busses running through these historic cities. In China, the bus was taken up almost as soon as London and New York had developed its operation. In the Sahara, the bus has come forward rapidly, and in Algeria there is one of the most picturesque bus routes known. An English woman, who served in the war as an ambulance driver, inaugurated bus operation over a route of 150 miles in which Sakamody Pass is crossed 3,000 feet above sea level.

Asia has not been slow in utilizing the motor bus. Busses are now running regularly between Bagdad and Aleppo, although the motor road is officially unpro-

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tected. The distance between these two cities, via Mosul, is 500 miles.

The inauguration of the "double-decker" has been watched with interest. In New York one such bus is in operation: in St. Louis the double-decker has met with more rapid response and there are now 75 busses of this type in operation. Probably the latest word in comfort has been achieved on the Peninsular Line of California, running from San Francisco to San Jose, 52 miles.

The growth of bus operation is shown in figures of passengers carried. In London there were carried in 1921 a total of 761,000,000 passengers; in 1922, 846,000,000 passengers; and in 1923 1,040,000,000 passengers. In 1911, 6,000,000 passengers were carried in the New York busses; in 1914, 11,000,000; in 1918, 26,000,000, and last year, 55,974,000.

DEEPEST GAS TEST IN OHIO DRY HOLE

The East Ohio Gas Co. recently completed the deepest gas test in Ohio, after drilling for a year, and reaching 6,000 feet. Work on it commenced June 21, 1923. The test proved a "dry hole." The operation had cost about $100,000. The average well costs about $12,000.

The derrick or rig was of almost exactly double strength. Two steam boilers were required to furnish the power for the drilling, bailing and operation. The hole was started with 18 inches diameter at the top, and finished with 8 inches at 5,700 feet deep, making it the deepest 8-inch hole in Ohio, and wound up at 5⅞ inches. Five big crown pulleys, each weighing 150 pounds, were worn out and scrapped before the test was finished.

The test wore out 22,500 feet of steel drilling cable. In addition, 21,000 feet of steel cable used in bailing was used up, as was 1,300 feet of heavy Manila cable used to soften the jars of the steel cable.

For weeks, toward the end, the drillers, working day and night, could average no more than 2 feet a day. The tools, when pulled out at these depths, were hot from the earth's heat. Water bailed from the bottom was warm, and it took a half, hour, pulling by steam, to get tools or bailer from the bottom, so they had half an hour to cool before they reached the top. The temperature of these depths is probably 150 to 160 degrees. The steel bits, when removed from the drilling tools were found to be hammered and dulled and worn to an inch less in diameter than when lowered. Four bits, six feet long, were worn down to the stem.

Classified Wants
Pages 118-119

MOTORSHIPS INCREASING

The growing popularity of the motor drive in the British shipping industry is attested by Consul General Skinner, at London, in a special report to the Department of Commerce on merchant marine developments in England. Internal combustion engines of various types have been built in increasing numbers and vessels already engined are being refitted with Diesel types, he reported. The general results of the operation of these vessels have been satisfactory, he declared, the figures of fuel consumption having in some cases been remarkably low.

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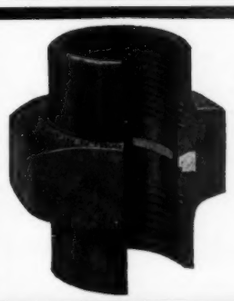

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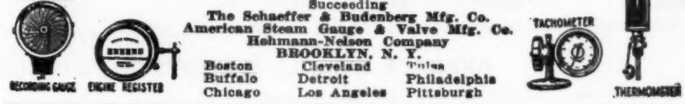

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Runs

	Month	Dy. Av.
*Prairie Pipe Line Co.	3,596,000	116,000
Gulf Pipe Line Co.	1,035,249	33,396
Texas P. L. Co.	469,448	15,143
Magnolia Petroleum Co.	1,152,274	37,170
Empire Pipe Line Co.	868,876	28,093
Cosden Pipe Line Co.	815,635	26,311
*Sinclair Pipe Line Co.	1,240,000	40,000
*Other lines	7,378,000	238,000
Total May	16,495,482	532,112
Total April	15,559,656	518,655
Difference	935,826	13,457

Shipments

	Month	Dy. Av.
*Prairie Pipe Line Co.	3,658,266	118,009
Gulf Pipe Line Co.	1,106,034	35,679
Texas Pipe Line Co.	466,978	15,063
Magnolia Petroleum Co.	1,138,580	36,728
Empire Pipe Line Co.	706,345	22,785
Cosden Pipe Line Co.	813,356	26,237
†Sinclair Pipe Line Co.	1,919,354	61,912
Other lines	7,285,000	235,000
Total May	17,093,913	551,413
Total April	16,435,126	547,841
Difference	658,787	3,572

Stocks

*Prairie Oil & Gas Co.	22,500,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line Co. and Gypsy Oil Co.	9,361,019
The Texas Co.	6,937,335
Magnolia Petroleum Co.	8,349,769
Empire Pipe Line Co.	3,097,235
Cosden Pipe Line Co.	2,953,548
*Sinclair Crude Oil Purchasing Co.	28,850,000
Carter Oil Co.	17,877,416
*Other lines	8,600,000
Total May	110,526,322
Total April	110,013,306
Difference	513,016

*Estimated. †Includes shipments of Texas crude.

Note—Stocks do not include approximately 8,100,000 bbls. of crude oil held in storage on private tank farms and leases.

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for April and May:

	April, '24	May, '24
Nat. Transit	205,042.09	199,626.14
S. W. Pa. P. L.	88,381.19	85,544.16
Eureka P. L.	380,526.94	372,494.35
Buckeye P. L. (Macksburg)	261,541.19	258,024.34
Buckeye P. L. (Cleveland)	16,107.20	15,210.59
Buckeye P. L. (Lima, etc.)	142,396.88	145,504.50
Indiana P. L.	12,436.48	12,812.12
Cumberland P. L.	356,889.53	372,609.80
N. Y. Transit	16,513.19	19,947.74
Tidewater P. L.	141,622.32	152,076.53
Pure Oil P. L.	183,828.77	188,558.69
Emery P. L.	35,132.01	35,511.41
Indian Ref.	231,387.33	66,447.27
Paragon Dev.	48,415.67	41,802.11
Pittsburgh P. L.	8,169.04	8,903.97
Swiss P. L.		
Rigs. Ref.	3,346.25	5,124.29
Total	2,131,736.08	1,930,197.00
Daily average	71,057.87	63,941.84

Note—Indian Refining Co. also reported other receipts of 293,234.66 bbls. Paragon Refining Co. had other receipts of 174,682.85 bbls. Paragon Development Co. had other receipts of 5,289.80 bbls. Pittsburgh Pipe Line had other receipts of 4,465.16 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for April and May:

	April, '24	May, '24
Nat. Transit	543,212.41	373,131.02
S. W. Pa. P. L.	287,478.70	253,585.74
Eureka P. L.	145,075.37	112,059.21
Buckeye P. L. (Macksburg)	89,013.28	100,473.78
Buckeye P. L. (Cleveland)	728.00	1,214.64
Buckeye P. L. (Lima, etc.)	656,008.49	680,684.61
Indiana P. L.	900,901.21	931,269.90
Cumberland P. L.	144,619.49	151,162.89
Southern P. L.		
Crescent P. L.		
N. Y. Transit	592,141.87	507,491.83
Northern P. L.	120,025.15	80,309.14
Tidewater P. L.	138,842.18	130,310.85
Pure Oil P. L.	200,612.67	204,887.66
Emery P. L.	23,002.49	38,385.97
Paragon Ref.	191,612.24	181,821.26
Indian Ref.	325,499.86	381,740.52
Paragon Dev.	56,687.68	44,760.63
Pittsburgh P. L.	12,861.46	11,634.19
Total	4,428,322.45	4,184,923.59
Daily average	147,610.75	134,997.50

Note—Indian Refining Co. also reported other deliveries of 12,698.94 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of April and May were as follows:

	April, '24	May, '24
Nat. Transit	1,105,932.47	969,330.61
S. W. Pa. P. L.	717,218.99	740,981.21
Eureka P. L.	1,792,565.99	1,910,892.33
Buckeye P. L. (Macksburg)	489,229.60	576,679.85
Buckeye P. L. (Cleveland)	17,746.31	16,959.63
Buckeye P. L. (Lima, etc.)	3,054,622.29	3,184,697.93
Indiana P. L.	618,065.87	628,594.63
Cumberland P. L.	556,556.10	568,123.90
Southern P. L.	436,265.29	512,524.99
Crescent P. L.	50,361.96	80,724.80
N. Y. Transit	771,716.68	704,366.99
Northern P. L.	588,009.16	763,364.39
Tidewater P. L.		
Pure Oil P. L.	373,501.89	359,265.82
Emery P. L.	23,364.52	21,790.55
Paragon Ref.	184,092.70	175,717.01
Indian Ref.	127,303.63	101,113.46
Paragon Dev.	9,956.12	11,370.55
Pittsburgh P. L.	5,662.00	7,521.89
Swiss P. L.		
Riggs Ref.	580.52	1,299.14
Toal	10,922,742.08	11,335,309.07
Increase	15,989.92	412,566.99

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of April and May, showing the gross stocks of the above fields:

	April, '24	May, '24
Pennsylvania	3,744,977.96	3,923,093.00
Lima	1,043,699.80	1,113,472.67
Kentucky	1,404,197.29	1,441,241.81
Mid-Continent	4,638,570.53	4,779,382.96
Illinois	91,296.55	78,118.63
Total	10,922,742.08	11,335,309.07

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1921	1922	1923	1924
Jan.	64,460	67,702	75,790	62,638
Feb.	70,054	75,096	71,093	68,023
Mar.	68,555	78,531	76,592	68,731
April	65,030	75,462	75,614	71,058
May	65,466	77,592	77,865	66,942
June	62,438	76,193	77,592	.....
July	59,486	76,435	71,879	.....
Aug.	64,888	78,302	76,910	.....
Sept.	60,110	78,512	72,368	.....
Oct.	57,683	77,209	76,256	.....
Nov.	54,479	75,313	70,762	.....
Dec.	61,000	73,351	69,271	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for past four years:

	1921	1922	1923	1924
Jan.	115,550	119,791	171,067	145,518
Feb.	96,736	111,362	164,219	148,732
Mar.	84,168	127,752	185,487	147,098
Apr.	101,015	127,068	170,751	147,611
May	100,253	127,840	177,102	134,997
June	105,037	137,688	173,598	.....
July	97,096	137,872	168,330	.....
Aug.	101,652	153,275	142,766	.....
Sept.	117,440	158,761	137,256	.....
Oct.	105,728	165,346	134,597	.....
Nov.	121,803	165,677	131,426	.....
Dec.	104,023	172,861	139,909	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields including oil received from other lines, at the close of each month for the past three years:

Jan.	16,297,858	14,040,567	12,907,30
Feb.	17,009,293	14,028,437	11,844,00
Mar.	16,877,937	13,873,146	10,906,70
Apr.	16,777,842	13,737,575	10,922,70
May	16,948,962	13,815,622	11,335,30
June	16,810,169	14,541,252	.....
July	16,669,286	14,645,584	.....
Aug.	16,235,229	14,770,539	.....
Sept.	16,228,545	14,803,444	.....
Oct.	15,757,746	14,504,111	.....
Nov.	15,171,972	14,157,736	.....
Dec.	14,323,765	13,444,361	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1923—	Receipts	Shipm'ts	Stocks
May	3,538.73	4,856.42	23,736.2
June	2,927.71	4,742.76	21,920.1
July	2,996.64	1,471.57	23,445.2
Aug.	3,199.07	3,769.34	22,874.9
Sept.	2,829.79	5,822.36	19,882.2
Oct.	2,694.23	5,251.81	17,324.7
Nov.	2,980.66	4,150.98	16,154.4
Dec.	2,892.07	3,499.27	15,546.2
1924—			
Jan.	2,942.19	3,641.71	9,846.7
Feb.	2,151.78	1,926.85	10,071.6
March	3,398.78	1,716.28	11,754.0
April	3,311.84	2,066.78	13,001.5
May	3,036.50	5,338.21	10,699.8

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, June 1	2,191,717.13
Runs from wells	721,111.69
Other receipts	192,021.72
Regular deliveries	471,793.27
Other deliveries	396,332.56

The amount of Illinois oil run by the Tidewater Pipe Line Co. in May was 29,963.94 bbls., and deliveries were 38,625.08 bbls. Adding these figures to those of the Illinois Pipe Line Co., makes the runs and deliveries from the Illinois field as follows:

1923—	Runs	Deliveries
May	624,107.98	532,518.09
June	582,511.83	509,137.77
July	594,653.42	489,269.17
August	594,747.94	367,152.31
September	542,561.59	305,325.40
October	576,867.09	347,313.31
November	546,853.43	395,052.91
December	534,185.64	383,542.61
1924—		
January	493,337.25	380,793.99
February	535,490.70	353,613.14
March	611,289.36	369,542.51
April	514,356.43	339,546.10
May	751,080.44	510,414.43

The Tidewater Pipe Co., Ltd., also delivered in May, 220,647.98 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 389,583.88 bbls.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Av. bbls. per wk.—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All-Ports
January	138,800	15,400	665,400	160,400	100,600	1,080,600	.....	172,000	.....	.....	172,000	1,252,600
February	90,250	36,250	832,000	208,250	36,250	1,203,000	.....	195,250	.....	.....	195,250	1,398,250
March	42,455	17,388	623,455	209,321	77,455	970,067	.....	.....	.....	.....	.....	970,067
April	39,669	17,969	614,369	88,200	52,269	812,476	.....	.....	.....	.....	.....	812,476

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Av. bbls. per wk.—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All-Ports
November	67,200	108,869	270,669	122,500	195,000	764,300	345,499	359,331	147,469	33,367	885,731	1,646,131
December	105,000	133,679	240,354	144,739	300,545	924,317	420,224	492,700	186,949	51,258	1,151,140	2,075,457
January	112,800	118,200	552,000	97,800	216,800	603,200	358,800	248,000	137,800	20,800	773,200	1,539,400
February	134,750	176,750	195,250	102,750	299,250	907,750	372,500	296,000	190,250	36,500	895,250	1,803,000
March	148,358	141,806	283,458	124,642	292,642	990,906	463,806	365,358	223,552	55,545	1,108,261	2,099,167
April	152,369	154,931	319,900	94,962	248,969	971,131	382,900	348,131	119,000	15,869	865,900	1,837,031

GROSS PRODUCTION BY MONTHS AND DAILY AVERAGE IN THE U. S. FOR 12 MONTHS

1923—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Wyoming-Montana	Other fields	Total
June:	Month	22,667,106	15,572,730	9,129,282	2,797,830	3,401,172	2,086,670	3,470,176	3,413,155	62,538,121
	Daily average	755,570	519,091	304,309	93,261	113,372	69,522	115,672	113,771	2,084,904
July:	Month	25,262,082	15,260,184	11,258,042	2,448,566	3,713,735	1,852,481	4,246,547	3,534,110	68,004,750
	Daily average	814,906	492,264	363,518	78,986	119,798	60,726	136,963	107,552	2,194,703
August:	Month	26,440,005	14,049,076	13,157,429	2,316,320	3,292,580	1,952,349	4,290,406	3,479,077	67,977,243
	Daily average	852,903	453,196	392,172	74,720	106,212	62,979	138,400	115,969	2,193,814
September:	Month	25,762,487	13,812,220	12,879,682	2,234,730	3,164,900	1,787,430	4,561,550	3,269,551	66,472,550
	Daily average	858,750	427,074	429,323	74,491	105,497	59,581	152,052	105,468	2,216,752
October:	Month	24,576,400	12,961,782	15,933,383	2,336,346	3,120,274	1,837,990	5,640,880	3,475,913	67,782,968
	Daily average	792,787	418,122	513,980	75,366	100,654	59,290	114,222	112,126	2,186,451
November:	Month	22,397,848	12,334,620	15,556,507	2,268,840	2,973,000	1,816,860	4,792,466	3,138,464	65,278,605
	Daily average	746,595	411,154	518,550	75,628	99,100	60,562	159,782	104,615	2,175,363
December:	Month	21,899,247	12,232,259	10,065,856	2,345,150	4,017,850	1,919,574	3,304,326	3,147,812	60,932,074
	Daily average	706,427	394,589	324,705	75,650	129,608	61,932	106,591	101,542	1,901,694
1924—										
January:	Month	20,912,500	12,115,353	10,089,291	2,254,878	3,686,680	1,827,053	4,631,395	2,955,500	58,472,650
	Daily average	674,597	397,263	325,461	72,738	118,925	58,937	149,400	95,339	1,886,899
February:	Month	19,341,226	12,236,637	10,372,024	2,112,853	3,302,750	1,697,892	4,275,706	2,997,701	56,336,793
	Daily average	666,939	421,953	357,656	72,857	113,888	58,548	147,438	103,369	1,942,648
March:	Month	19,913,262	13,367,851	11,501,440	2,206,425	3,882,696	1,791,049	3,992,816	3,267,769	59,913,796
	Daily average	642,363	431,221	372,450	71,176	125,248	57,775	128,784	105,089	1,932,677
April:	Month	19,299,849	13,483,240	11,755,890	2,268,540	4,068,225	1,644,840	3,880,410	3,231,000	59,630,994
	Daily average	643,363	449,408	391,863	75,618	135,608	54,828	129,347	107,700	1,987,799
May:	Month	19,833,576	14,232,193	11,847,456	2,480,310	4,659,117	1,863,441	4,033,564	3,365,316	62,304,973
	Daily average	639,793	459,103	382,176	80,010	150,291	60,111	130,115	108,236	2,009,838
	Total 12 months	268,305,588	160,657,145	143,146,282	28,070,788	43,282,981	22,107,623	49,018,741	39,055,358	753,644,511
	Daily average	733,075	438,954	390,563	76,696	118,260	60,400	133,930	106,709	2,058,119

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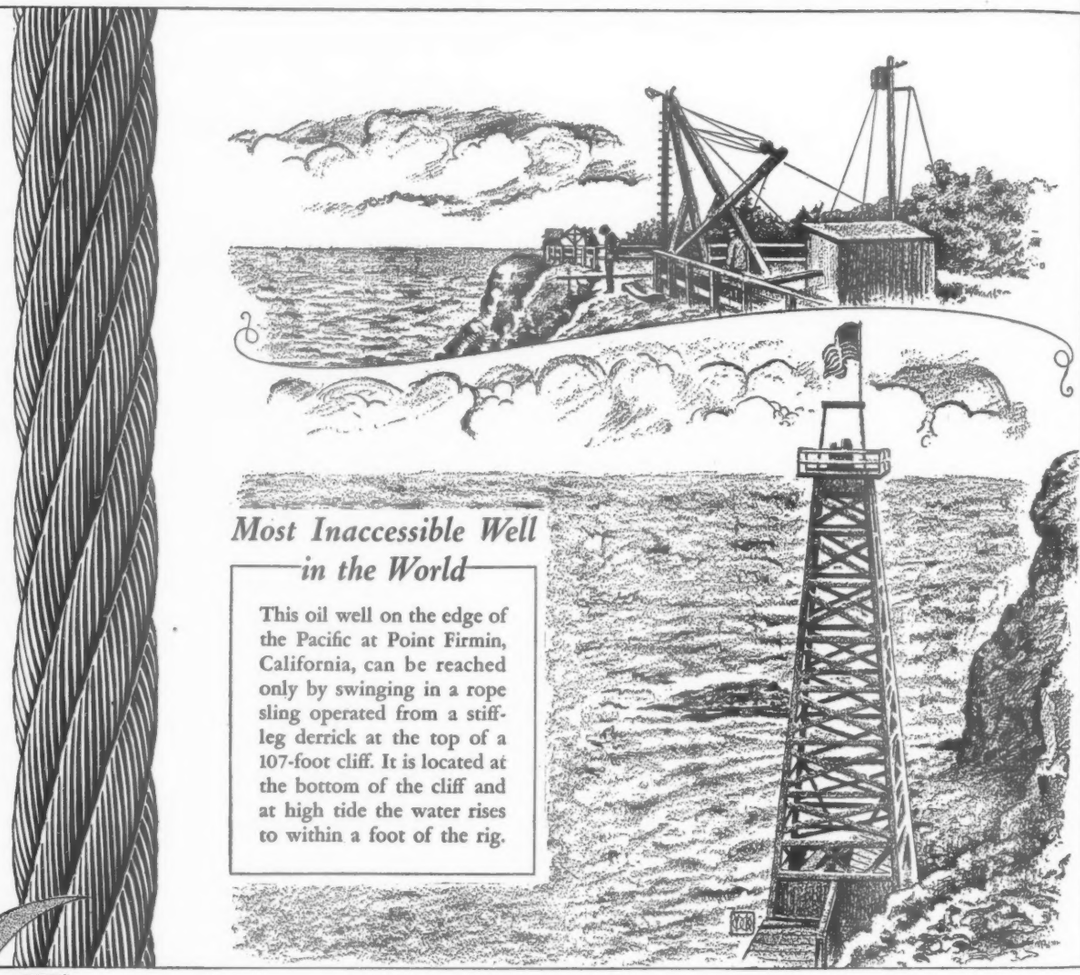

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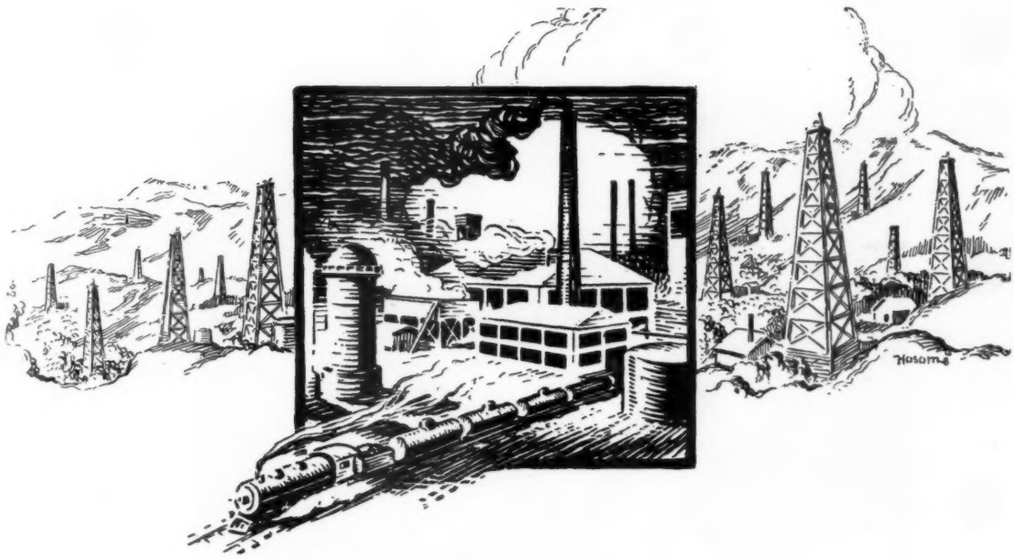

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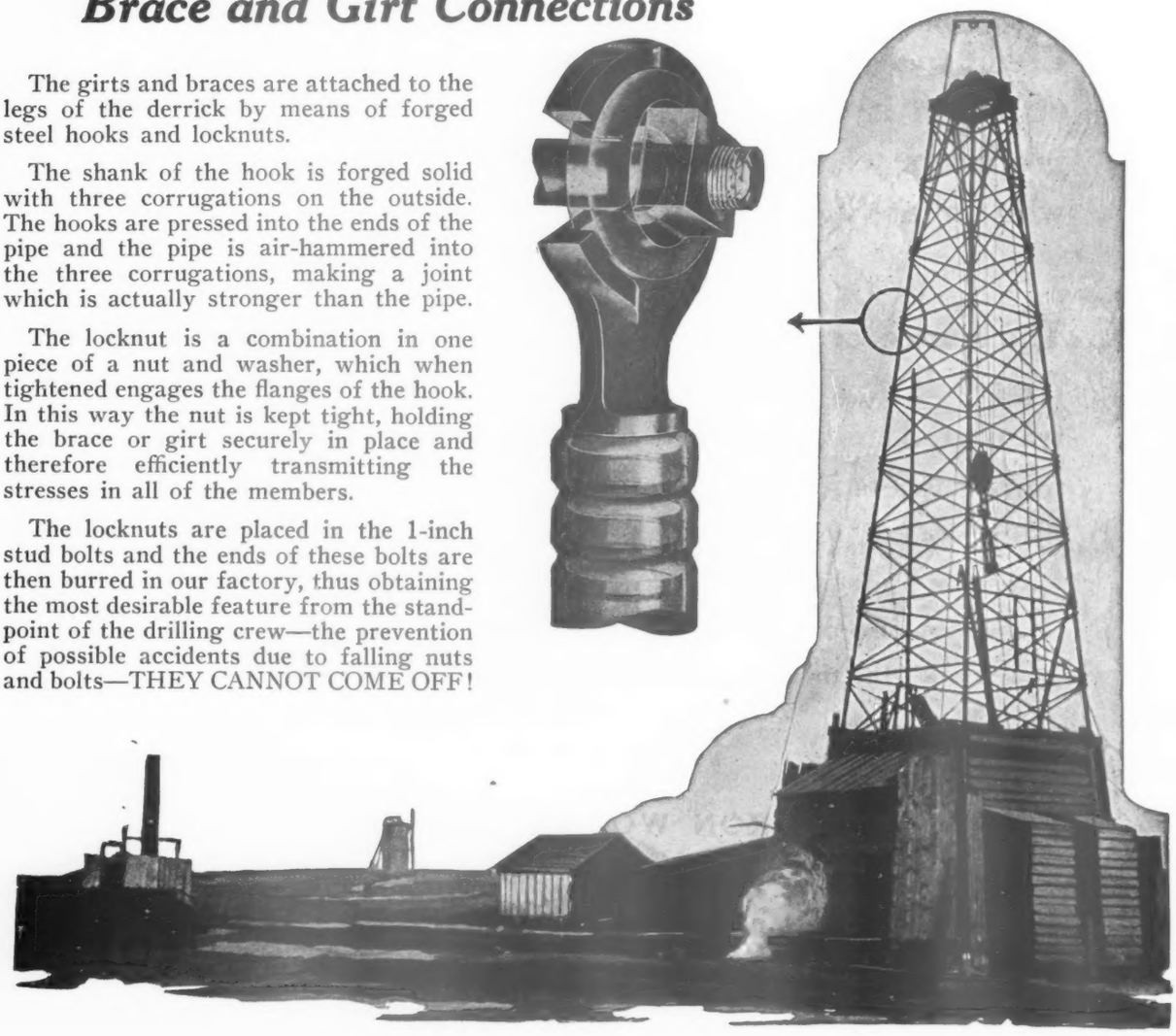

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But, thirty hard working years have been put into perfecting the new forged end rods now being made by this company.

There is a vast difference in Sucker Rods—particularly in the ends—they may look alike on the outside, but no rod end made has the even, firm inside structure of forged steel that you get in a JONES Forged End Rod.

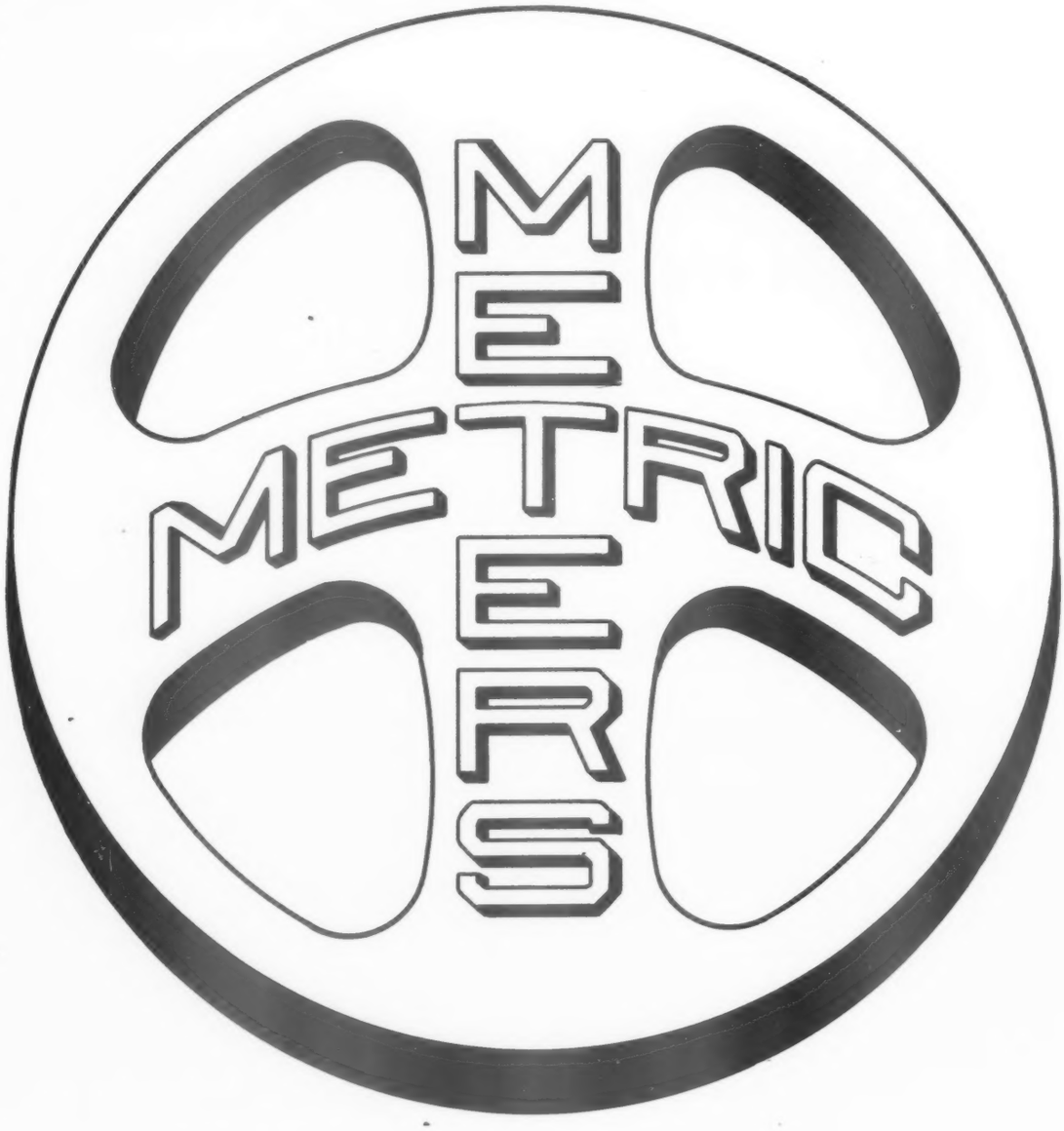
These forged end rods are known as JONES PERFECT, a double pin type with reversible couplings and JONES GIANT with drop forged couplings.

I claim no rod made has the inherent strength of these rods—you are invited to test them in any way to prove this claim to your own satisfaction.

Yours very truly,
THE S. M. JONES COMPANY

P. C. Jones Pres.

P.C.J./K



WHEN you Standardize on these meters you are assured of the accurate measurement of both natural and manufactured gas.

Write for Bulletin No. 118

METRIC METAL WORKS

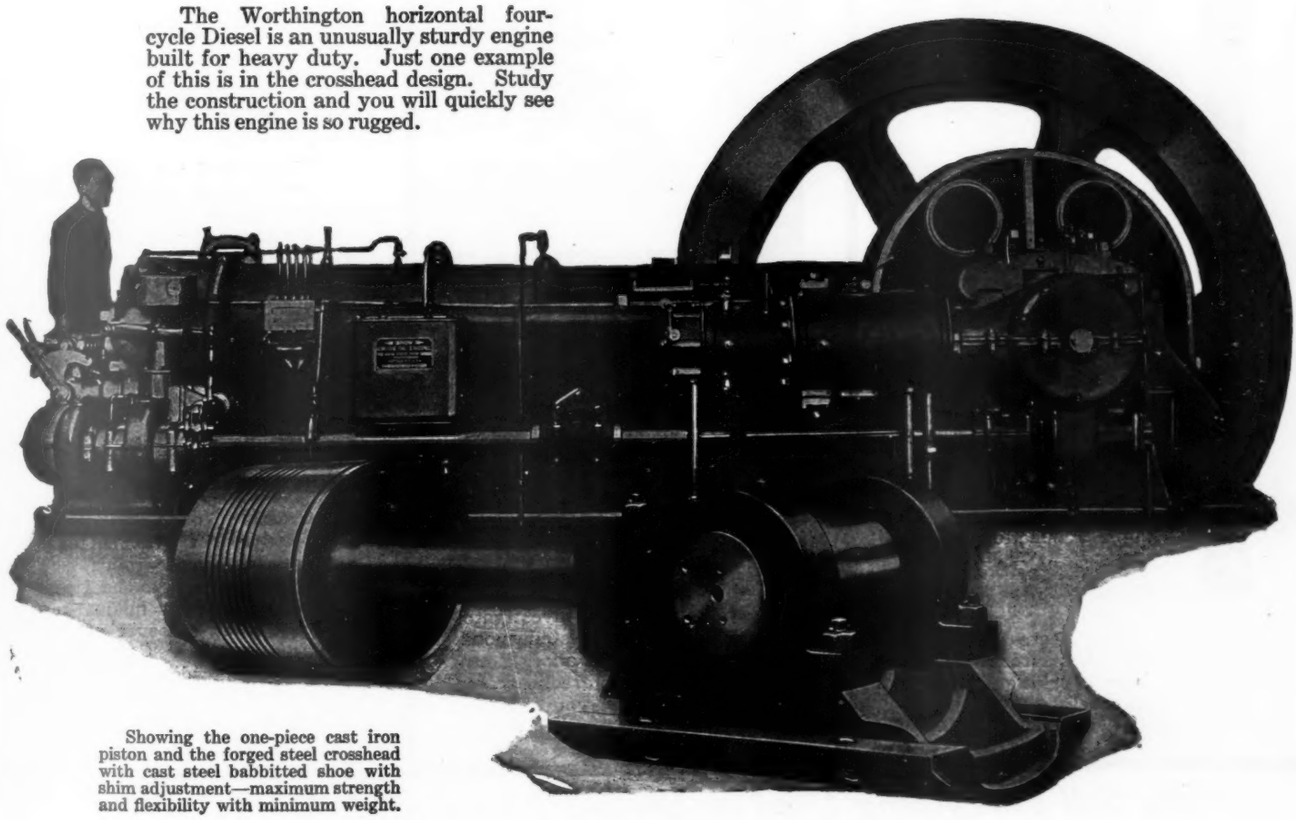
OF

AMERICAN METER COMPANY, Inc.

Erie, Pennsylvania

A Heavy Duty Engine With a Forged Steel Crosshead

The Worthington horizontal four-cycle Diesel is an unusually sturdy engine built for heavy duty. Just one example of this is in the crosshead design. Study the construction and you will quickly see why this engine is so rugged.



Showing the one-piece cast iron piston and the forged steel crosshead with cast steel babbitted shoe with shim adjustment—maximum strength and flexibility with minimum weight.

WORTHINGTON PUMP AND MACHINERY CORPORATION

Executive Offices: 115 Broadway, New York City. Branch Offices in 24 Large Cities

W-204.8

WORTHINGTON

Three Oil-Field Products It Will Pay You to Investigate

Only a Perfect Barrel Can Leave the Jarecki Plant

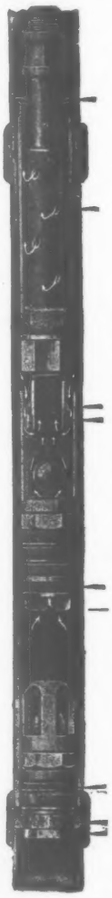
If it's toughness, uniformity and long life you expect in a working barrel, we suggest that you try the

JARECKI CAST-IRON WORKING BARREL

on your next order. You will find it, first of all, close grained, free from defects and dependable. The bore is highly polished, inspected as to diameter and absolutely true. And the name Jarecki is proof that it has passed a high-water pressure test and a rigid inspection that assures a perfect product.

Your nearest Jarecki store has Jarecki Cast-Iron Working Barrels in stock.

Time-Tested, Jarecki-Guaranteed—Always Reliable



Pumps with sand-trapping devices come and go but the

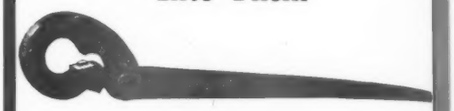
JARECKI PUMP With SAND TRAP

keeps right on upholding the leadership it has gained thru years of successful service.

The reason is obvious: A great many wells that required change of cups *every day* before run a *year or more* without replacements since the Jarecki Pump keeps working parts free from sand. Sticky valves and parted tubing are evils that this device remedies.

As an investment in good business, we invite you to investigate this time-tested money-saver at once. Your nearest Jarecki store will give you full details.

Long Life Is Built Into Them



JARECKI Extra-Service CRUMBIE TONGS

If you had the experience of 72 years to guide you, and the most modern equipment at your disposal, you couldn't produce better Crumbie Tongs than those bearing the Jarecki name. The handles are of hand-forged steel.

The heavy jaws are of Air Furnace Malleable Iron.

Design and workmanship are in accordance with Jarecki standards.

Crumbie Tongs are not expensive, but even in moderately priced goods you might as well get the greatest value your money can buy. You are sure of getting it every time when you standardize on goods sold at your nearest Jarecki store.

"We Sell Everything Used or Needed About An Oil or Gas Lease"

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130

HI-STEEL FITTINGS

Hi-Steel return bend being tested to 2500 lbs. cold oil pressure. All Hi-Steel fittings for the Cross Cracking process must hold a pressure of 2000 lbs. for 5 minutes. Hi-Steel fittings made of electric steel must all stand a pressure test without sweating or leaking. Careful molding and solid steel eliminate all defects so that the pressure test is merely a matter of protection.

On one particular job, HI-STEEL Fittings have been in active, continual use, day and night, for more than two years at 800 deg. F. and 800 lbs. pressure—and with never a leak or a failure.

This same dependable service is at your command in large, small, special, heavy and extra heavy hydraulic electric steel fittings.

HI-STEEL Fittings are made of the best obtainable electric steel. They are tested to 2500 lbs., are specially heat treated and are close tolerance machined.

Ohio Steel service is your service. Take advantage of it and let us quote on your specifications.

The Ohio Steel Foundry Company

Springfield, Ohio

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it's easy to become accustomed to the best

The factor Time is a very vital one to every driller and oil operator. A breakdown of the drilling engine at a crucial moment may mean the loss of a small fortune.

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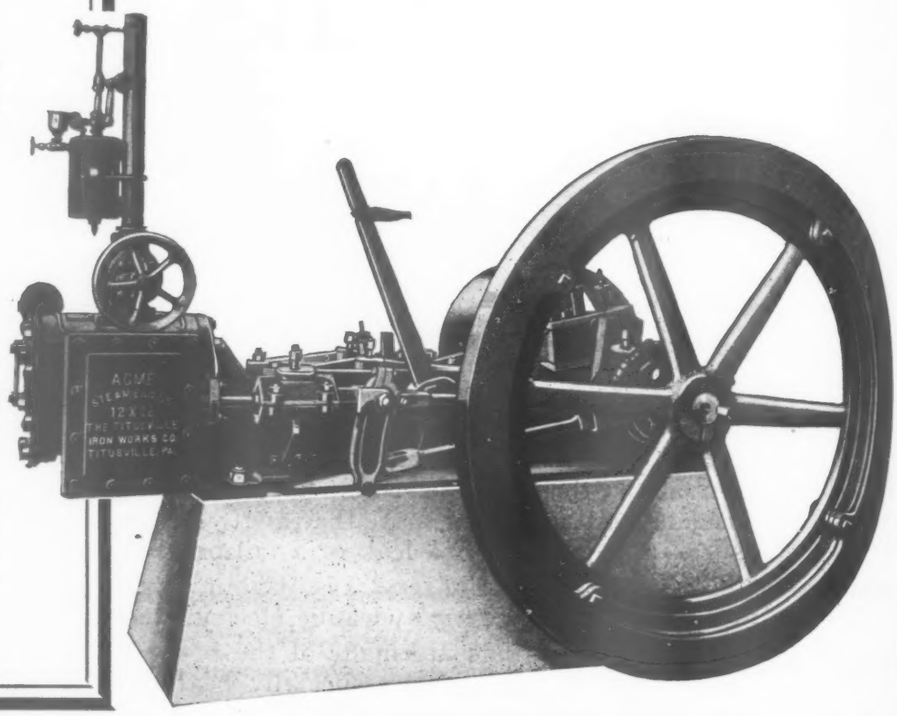
STEAM
DRILLING
ENGINES

The TITUSVILLE Acme Steam Drilling Engine has been giving splendid, efficient service for more than a generation.

The improved ACME with Outboard Bearing is the last word in engine construction. It is easy—and no more expensive—to become accustomed to the best.



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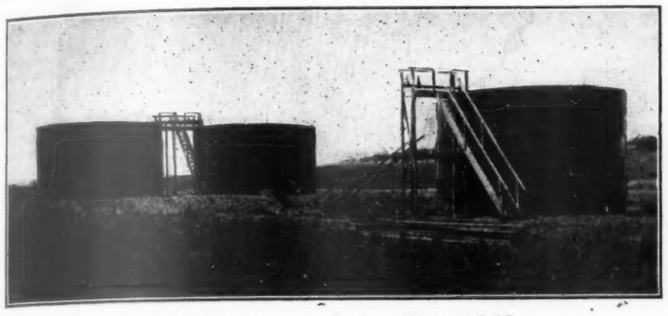
PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS



Perfection storage tanks in a Kansas field

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Why Storing Oil Is No Longer a "Problem"

Under present conditions, storage of a certain part of your crude seems inevitable.

But such a procedure does not spell financial loss as in former years Evaporation no longer takes its daily toll—Perfection Vapor Pressure Tanks have attended to that. There is no shrinkage.

And the biggest tribute ever paid us is that our competitors in the lease tank building game have attempted to copy every principle that makes Perfection Vapor Pressure Tanks the last word in efficiency and economy.

That's why we warn oil producers to use considerable care in the selection of lease storage tanks. Better not accept a product that its makers say is "Just as Good as Perfections."

If you call our own field representative in your district and have a complete battery installed, you will have the satisfaction of knowing that you are taking no chances.

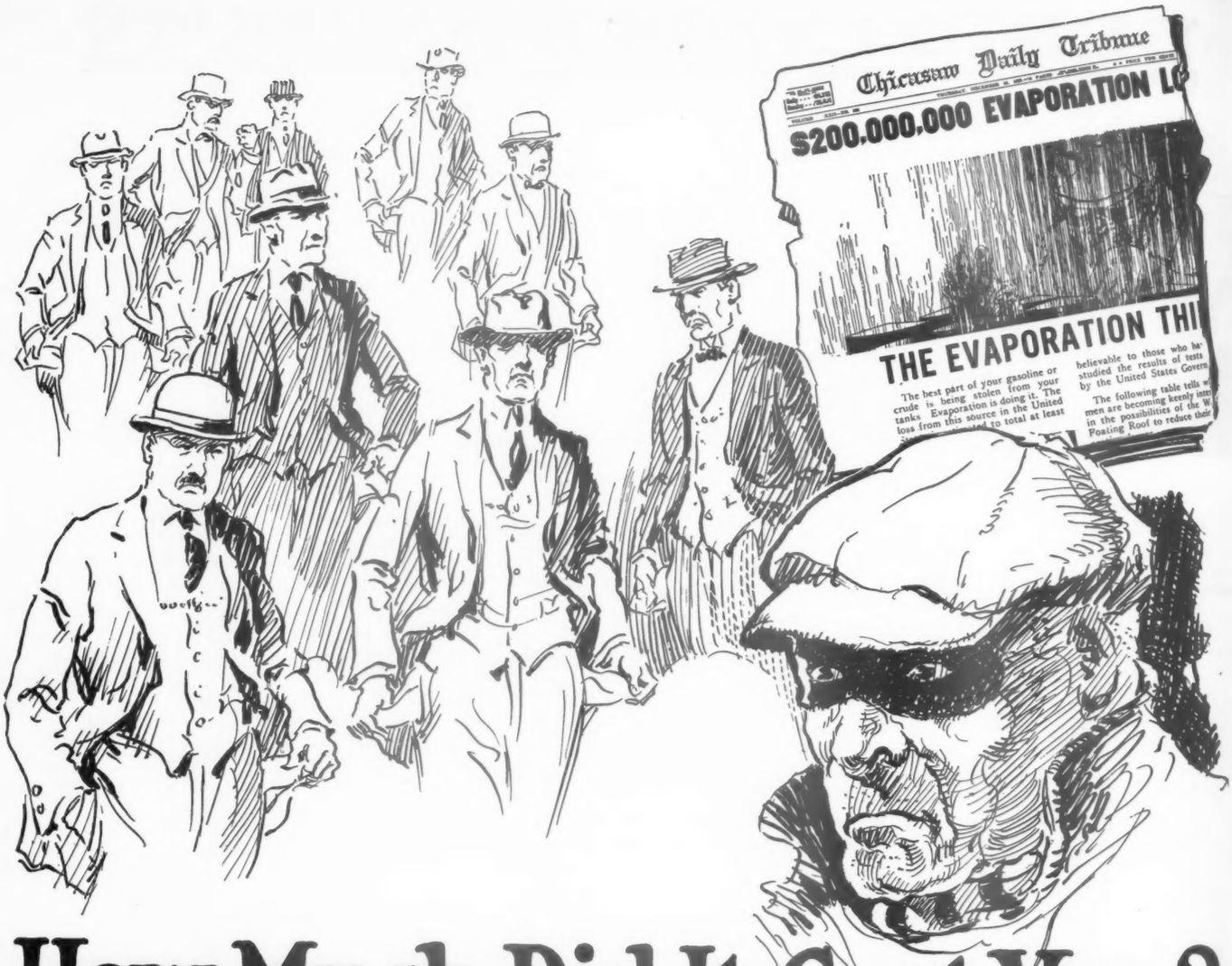
But don't take our word for it—ask the man who owns Perfections.

We will be surprised if his tanks have not paid for themselves several times over.

Black Sivalls & Bryson
·INC·

BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields


Chicagoan Daily Tribune
$200,000,000 EVAPORATION L
THE EVAPORATION THI
The best part of your gasoline or crude is being stolen from your tanks. Evaporation is doing it. The loss from this source in the United
believable to those who ha studied the results of tests by the United States Govern
The following table tells w men are becoming keenly inte in the possibilities of the W Floating Roof to reduce their

How Much Did It Cost You?

What was your loss in the $200,000,000 evaporation robbery in 1923?

You paid part of it; that's sure. No one in the oil industry can escape paying a part of this loss; for losses reduce income and affect wages and salaries as well as dividends.

More than half a million dollars every day is lost through evaporation. The industry, heretofore, has been powerless to effectively reduce this waste—but now it is possible, for the Wiggins Floating Roof cuts down the evaporation loss to a practicable minimum, as proved by actual tests.

What could show more plainly the value of the Wiggins Floating Roof than the accompanying figures derived from actual tests carried on by Mr. Wiggins when he was with the U. S. Bureau of Mines. This tabulation definitely indicates one positive thing—that evaporation is the most serious problem in the oil industry today.

These figures are the index numbers from which you can determine your share of the 1923 $200,000,000 evaporation loss. Just take the figures for the class of roofs you use and multiply it by the number of tanks you have. That will roughly tell you your loss last year.

Now what can you do about it? First, get our bulletin on the Wiggins Floating Roof, and prices on roofs for your tanks. Then determine the savings you can make with this roof. You will then know what to do to stop your evaporation losses.

But first write for the bulletin.

Annual Evaporation Losses from a 55,000-Barrel Tank Handling 10,000 Barrels a Day—In Dollars

Kind of Oil Pumped	Evaporation Losses in Dollars Based on 42 Gallons of Gasoline to the Barrel and a price of Ten Cents a Gallon	
	Sheathing roof covered with gas tight galvanized iron	Wiggins Floating Roof
Motor Fuel (58° Be. Gas.)	$27,300	$1,260
Light Crude (37-40° Be.)	16,380	830
Average Mid-Continent Crude ((33°-36° Be.)	12,600	630

Why the U. S. Navy Uses the Wiggins Floating Roof

Because no other type of device keeps fire out of the tank.

Because no other type of device keeps oil in the tank.

Because it is the most PRACTICAL means of solving the fire and evaporation problems.

CHICAGO BRIDGE & IRON WORKS

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HORTON Products include the 5 RING 55,7 RING 80 and other tanks, THE HORTONSPHERE and Refinery Equipment

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co.....171
Acme Petroleum Co. 128
Ajax Iron Works 6-7
Alrich Pump Co. .....
American Appraisal Co. 147
American Cable Co. 4
American Rolling Mill Co.....
American Schaeffer-Budenberg Corp. 175
American Sheet & Tin Plate Co.....
American Tank Co. .....
American Zinc, Lead & Smelting Co.
Anderson, Carl B. 173
Anderson & Anderson 172
Andrews Steel Co. 145
Armstrong Bros. Tool Co.....167
Armstrong Mfg. Co. .....
Athey Truss Wheel Co.....119
Atlas Ball Co. .....
Austin Co. .....
Axelson Machine Co. .....

B

Baker Casing Shoe Co. 169
Baldwin Chain & Mfg. Co.....143
Barber-Greene Co. .....
Barnickel, Wm. S., & Co. 173
Barnsdall Refining Co. 166
Bartlesville Supply Co. .....
Bay City Foundry & Machine Co.....
Bell Pump Co. 165
Bessemer Gas Engine Co. 65
Bethlehem Shipbuilding Corp. .....
Bethlehem Steel Co. .....
Bignall & Keeler Machine Works...149
Biggs Boiler Works Co. 97
Black, Sivalls & Bryson, Inc..... 15
Borden Co. .....
Boss Mfg. Co. .....
Bovaird & Seyfang Mfg. Co.....
Braden Co., The .....
Bradford Motor Works 100
Bridgeport Machine Co. 82-83
Bristol Co. .....
Broderick & Bascom Rope Co.....
Brokaw, Dixon, Garner & McKee...172
Brown & Thomsen 173
Brown Welding & Machine Co.....102
Buckeye Traction Ditcher Co.....
Buffalo Steam Pump Co.....
Burns Tool Co. 164
Burt Mfg. Co. .....
Butler Mfg. Co. .....

C

California Pipe Line Machine Co....
Calorizing Co. 37
Cantilever Wrench Co. 140
Capital Abstract & Realty Co.....171
Carnegie Steel Co. 169
Caudill, Samuel J. 173
Celite Products Co. .....
Central Forging Co. 175
Central Steel Co. 73
Chain Belt Co. 120
Champion Machine & Forging Co....118
Chaplin-Fulton Mfg. Co. 168
Chapman Valve Mfg. Co. 107
Chestnut & Smith Corp. 125
Chicago Bridge & Iron Works..... 16
Chicago Flexible Shaft Co. 151
Chicago Pneumatic Tool Co. 57
Clapp, Frederick G. 173
Clark Bros. Co. 68-69
Clark, Robert W. 174
Classified Wants 158-159
Climax Engineering Co. 174
Colonial Steel Co. 161
Columbian Rope Co. .....
Columbian Steel Tank Co. .....
Columbus Sucker Rod Co.....139
Connolly, D. F., Agency, Inc.....108
Continental Supply Co. 137
Cook Paint & Varnish Co. 130
Cooper, C. & G. Co.....42-43
Cosden & Co. 168
Cox & Sons Co., The .....
Crandall & Murta 172
Crane Co. .....
Cyclone Fence Co. .....

D

Darling Valve Mfg. Co. 77
Dart, E. M., Mfg. Co.....
Davis, G. M., Regulator Co.....167
Dawson Towel Supply Co. 171
Dayton Pipe Coupling Co. 1
De Laval Separator Co. .....
De La Vergne Machine Co.....
Delta Electric Co. .....
Deming Co. .....
Dempster Mill Mfg. Co. 166
Detroit Graphite Co. .....
Diamond Drilling & Exploration Co. 168

D

Dickey-Ashby-Fountain Co. 171
Dixon, Joseph, Crucible Co.....
Dorn, R. J. 51
Dresser, S. R., Mfg. Co. 35
Dunn Mfg. Co. 2

E

Eagle Picher Lead Co. 81
Eastern Torpedo Co. 163
Eaton, Clayton H. 172
Edward Valve & Mfg. Co.....
Empire Refineries, Inc.....
Equitable Meter Co. .....
Essex Brass Corp. 175
Exchange National Bank 141

F

Fairbanks-Morse Co. .....
Federal Engineering & Supply Co...175
Fenwick-Reddaway Mfg. Co. 166
Fisher Governor Co. .....
Foamite-Childs Corp. .....
Fohs, F. Julius 174
Foos Gas Engine Co. .....
Fort Worth Laboratories 175
Foster, Dean E., Corp. .....
Foster-Hoefer Mfg. Co. .....
Foster & Reiter 174
Foxboro Co., Inc., The 106
Francis, Bro. & Co. 174
Franklin Valveless Engine Co..... 75
Freeborn Engineering Co. 167
Frick-Reid Supply Co. 79

G

Gantz Tank Co. .....
Gaso Pump & Burner Mfg. Co.....
.....Inside Back Cover
General American Tank Car Corp...
General Electric Co. .....
General Gear & Machine Works....169
General Motors Truck Co. .....
General Petroleum Engineers, Inc...174
Gilbert & Barker Mfg. Co.....
Gomory, W. L. 175
Goodrich, B. F., Rubber Co., Inc.....
Goodyear Tire & Rubber Co. 138
Goulds Mfg. Co. 173
Graver Corp. .....
Great Western Portland Cement Co.
Greenhalgh, J. H. & Co. .....
Greene, Frank C. 174
Greene-Tweed & Co. .....
Griscom-Russell Co. 127
Guiberson Corp. 115
Gurley, W. & L. E. .....

H

Halliburton, Erle P. .....
Harris Bros. Co. 170
Harris, Frank, Sons & Co., Inc.....
Harrisburg Pipe & Pipe Bending Co.
Hazard Mfg. Co. 155
Henry, George W. 171
Herald Bros. 172
Hercules Corp. .....
Hercules Motors Corp. .....
Heydrick Mapping Co. 167
Hill-Hubbell & Co. .....
Hinderliter Tool Co. 88-89
Homestead Valve Mfg. Co. .....
Hood, H. H. 175
Hoover Steel Ball Co. .....
Hope Engineering & Supply Co. 104-164
Hopkins, Edwin B. 174
Hough, Chas. N. Mfg. Co.....168
Hughes Tool Co. .....Back Cover
Hunt, Robert W., Co. 172
Huntley & Huntley 175

I

Illinois Glass Co. .....
Imperial Belting Co. 175
Imperial Brass Mfg. Co.....
Imperial Oil Marketing Co.....126
Industrial Construction Co. 45
Ingersoll-Rand Co. 3
International Derrick & Equipment Co. 39
International Harvester Co. of America .....
International Supply Co. 101
Iron King Mfg. Co. 143

J

Jackson, Isaac, Belt Fastener Co...173
Jarecki Mfg. Co. 12
Jacobson Engine Co. 155
Johns-Manville, Inc. .....
Johnson, Roswell H. 173
Jones, S. M., Co. 9

K

Kansas City Bolt & Nut Co. .....
Kansas City Hay Press Co. 164
Kansas City Structural Steel Co.....151
Kaw Boiler Works Co. .....
Kellogg, M. W., Co.....145
Kelly & Jones Co. 55
Kelly-Springfield Tire Co. .....
Kerr, John B. 175
Kesselman & Co. 169
Keuffel & Esser Co. 172
Kewanee Boiler Co. 142
Kinney Mfg. Co. 162
Kirk, Charles T. 173

L

Lafe Speer Abstract Co. 171
Landis Machine Co. .....
Larkin & Co. 114
Larkin Packer Co. 161
Lasky, Bernard H. 173
Layne & Bowles Co. 112
Leavitt Machine Co. .....
Lebus Rotary Tool Works.....
Leidecker Tool Co. 116
Lewis, James O. 172
Link-Belt Co. .....
Longyear, E. J., Co. 174
Lucey Mfg. Corp. 59-60-61-62
Ludlow Valve Mfg. Co. 162
Lufkin Rule Co. 172
Lunkenheimer Co. .....

M

Magnolia Petroleum Co. .....
Maloney Petroleum Co. 98
Marsh Gauge Pole Co. 172
Matson, George C. 172
Matteson, W. G. 174
Meriam Co. 175
Messimer, H. H. 173
Metric Metal Works 10
Miller, Max B. & Co., Inc.....
Moon Mfg. Co. 160
Moore, Lee C. & Co., Inc...Front Cover
Morrison Bros. .....
Munn & Co. 175

Mc

McCord Radiator Mfg. Co. .....
McDonald, A. Y., Mfg. Co. .....
McIntosh & Seymour Corp. 153
McGregor Working Barrel Co.....
McNutt, V. H. 174

N

National Airoil Burner Co. .....
National Lead Co. .....
National Meter Co. 169
National Supply Co. 33
National Transit Pump & Machine Co. 96
National Turnbuckle Derrick Co.....160
National Tube Co. .....
New Bedford Cordage Co. .....
Norris Brothers 162
North American Car Co.....
Northern Oil Information Bureau...167
Northup Equipment Co. 152
Novo Engine Co. 144
Nye Tool & Machine Works.....

O

O'Brien Steel Construction Co.....161
Ohio Steel Foundry Co. 13
Oil Conservation Engineering Co....113
Oil Well Improvements Co.....105
Oil Well Supply Co. 93-172
Oklahoma Steel Castings Co..... 53

P

Page Fence & Wire Products Assn...
Parker Cup & Specialty Co.....170
Parkersburg Machine Co. 161
Parkersburg Rig & Reel Co..... 47
Pattin Brothers Co. .....
Penn American Refining Co.....
Pennsylvania Petroleum Co. .....
Petroleum Iron Works 129
Pforzheimer, Carl H. & Co.....163
Pioneer Tank & Boiler Co.....171
Pittsburgh-Des Moines Steel Co.....
Pittsburgh Meter Co. 157
Pittsburgh Pipe Coil & Bending Co...157
Pittsburgh Reinforced Brazing & Machine Co. .....
Powell, Wm., Co. .....
Power Piping Co. .....
Producers & Refiners Corp.....170
Pure Oil Co. 5
Pyle National Co. 133

Q

Quesada, Irving G. 175

R

Reading Iron Co. .....
Reading Steel Castings Co. 171
Reed Roller Bit Co. 49
Regan Forge & Engineering Co.....131
Reid, Joseph, Gas Engine Co.....149
Republic Iron & Steel Co.....
Republic Rubber Co. .....
Republic Supply Co. 109
Rich, John L. 173
Ring, Dewitt T. 175
Robinson, Heath M. 172
Robinson Packer Co. 87
Rock Island Plow Co.....148
Roots, P. H. & F. M. Co.....170
Ross-Meehan Foundries 171
Rotary Disc Bit Co.....
Ryerson, Joseph T. & Son.....173

S

Sand Springs Water Co.....171
Shaffer, J. E. Co.....170
Shippers Car Line Co. 170
Sinclair Refining Co. 31
Sivyer Steel Castings .....
Smith Separator Co. 99
Smith Steel Couplings .....
South Chester Tube Co. .....
Spang & Co. 91
Spence, H. M. 174
Spengler Core Drilling Co. .....
Stalder, Walter 174
Standard Engineering Co. .....
Standard Seamless Tube Co. .....
Standard Tank Car Co. .....
Stanley Belting Corp. .....
Star Drilling Machine Co. .....
Stewart Iron Works Co. .....
Stewart, Irvine E. 172
Stull, J. C. 174
Sullivan Machinery Co. .....
Superior Tube Co. 8
Swartwout Co. .....

T

Tagliabue, C. J., Mfg. Co. .....
Texas City Terminal Railway Co.....
Texas Co., The 132
Texas Gulf Sulphur Co. .....
Texas Oil Pump Co. .....
Thomas, J. Elmer 173
Tide Water Oil Co. .....
Titusville Forge Co. .....
Titusville Iron Works 14
Tnemec Paint & Oil Co. .....
Toledo Pipe Threading Machine Co...165
Trimont Mfg. Co. 156
Trumble Gas Trap Co. .....
Truscon Steel Co. 136
Tulsa Ice Co. 171

U

Union Machine Co. 117
United Iron Works 134
Universal Oil Products Co.....123

V

Vogt, Henry, Machine Co.....

W

Wall Rope Works, Inc. .....
Walworth Mfg. Co. .....
Warren City Tank & Boiler Co.....
..... Inside Front Cover
Washburne, C. W. 174
Waukesha Motor Co. 165
Weaver, Ralph M., Jr.....172
Wertzberger Derrick Co. 95
Westcott Valve Co. .....
Westerman Bros. 175
Western Bank Supply Co. 171
Western Machinery Co. 103
Westinghouse Electric & Mfg. Co...135
Wheeling Steel Corp. 163
White Company .....
Wickwire-Spencer Steel Corp. .....
Wico Electric Co. .....
Williams, J. H. & Co. 174
Williamsport Wire Rope Co.....110
Wilson & Snyder .....
Wilson & Willard Mfg. Co. .....
Wilson Welder & Metals Co.....111
Winchester, Dean E. 175
Wood & Wood 173
Worthington Pump & Mach. Corp... 11
Wright, Harry F. 175
Wright Mfg. Co. .....

Y

Yale & Towne Mfg. Co.....